

The Southern
Santa Clara Valley:
**A GENERAL PLAN
FOR ARCHAEOLOGY**



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ARCHAEOLOGICAL IMPACT
EVALUATION: SAN FELIPE
DIVISION, CENTRAL VALLEY
PROJECT. part I

THE SOUTHERN
SANTA CLARA VALLEY,
CALIFORNIA:
A GENERAL PLAN
FOR ARCHAEOLOGY

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ERRATA

Page 95, Paragraph 4: "Schovill et al 1972" should read "Scovill et al 1972".

Page 95, Paragraph 4: "DeClary 1973" should be changed to "U.S.D.I. 1973".

Page 116; "DeClary" should be changed to "U.S.D.I.,"

Page 117, second citation: "Warriers" should be "Warriors",

Page 122: "Schovill..." should be "Scovill...".

Page 123: "Tugger, B.G." should read "Trigger, B.G." Beneath Dr. Trigger's name, the date 1967 should appear.



1: THE PROJECT

Above: Recording site Gilroy-4

Left: Noting damage at site
Gilroy-2



INTRODUCTION

This report is one outcome of the San Felipe Archaeological Study, an archaeological evaluation of the Bureau of Reclamation's Central Valley Project, San Felipe Division, financed by the U.S. Department of the Interior, National Park Service, under Contract #CX800030030T. The study had two basic purposes:

- 1) to ascertain the general nature and status of archaeological resources in the southern Santa Clara Valley of California, to assess the overall impact of the San Felipe Project upon those resources, and to explore ways to control this impact.
- 2) to determine what specific archaeological sites might lie directly in the path of the San Felipe construction, and to recommend ways of protecting or salvaging such sites.

This report is designed to fulfill the first purpose; the second is fulfilled by a briefer companion report (King 1973) and a set of detailed maps showing specific project impacts. Our report is divided into two volumes because we believe this volume contains information and recommendations of general pertinence, while the second pertains primarily to the federal agencies directly responsible for San Felipe construction. The two purposes--one general, the other specific--require different approaches to presentation.

We assume that this volume will be read by three different audiences: professional planners, the general public, and archaeologists. We ask that each group bear with us while we try to address the needs of the others: it is necessary for us to design a research program for the area (Chapter IV) that makes sense to archaeologists, even if it bores planners and the public. Similarly, we need to analyze the archaeological planning programs of the cognizant agencies, even though the average archaeologist finds such analyses irrelevant to his interests. We hope that the brief summaries inserted at the beginning of each chapter will help the reader decide what he wants to read and keep it in context.

The San Felipe Archaeological Project was designed and implemented in order to provide information for an environmental impact statement to be prepared by the Bureau of Reclamation. This work was executed in compliance with the National Environmental Policy Act (NEPA) (P.L. 91-190; 83 STAT.852). Although not specifically required by the contract, the San Felipe Study was also designed to provide data and recommendations pursuant to the policy set forth by the President in Executive Order 11593, which requires that all federal agencies exercise caution to minimize and mitigate the impacts of their actions on places qualifying for inclusion in the National Register of Historic Places (Nixon 1971, Sec. 2). In keeping with this Order and the provisions of the NEPA, we attempt in this report to analyze the regional impacts of a federal project--supplying supplemental water--on the archaeological resources of the southern Santa Clara Valley.

Under a contract between the National Park Service and the Frederic Burk Foundation for Education, the San Felipe Archaeological Study was implemented as a cooperative project by the A.E. Treganza Anthropology Museum at

California State University, San Francisco, the Archaeological Survey at West Valley College, Saratoga, and the Santa Clara County Archaeological Society. All three institutions are members of the Bay Area Archaeological Cooperative, and the project was developed consistent with guidelines and recommendations developed by the Cooperative and the Society for California Archaeology, as well as with those of the National Park Service, Arizona Archaeological Center.

CHAPTER I

THE PROPOSED SAN FELIPE PROJECT

Summary

The San Felipe study area comprises the lowland drainage of the Pajaro River in the southern Santa Clara Valley of California. The San Felipe Division of the Bureau of Reclamation's Central Valley Project is designed to supply supplemental water to this area and to the coastal terrace around Watsonville, at the mouth of the Pajaro. Our study, however, was primarily concerned with the South Santa Clara and Hollister subareas - i.e., the southern Santa Clara Valley. Although we inspected the rights-of-way of San Felipe Division facilities in the Watsonville subarea, we did not undertake a general investigation there.

Location

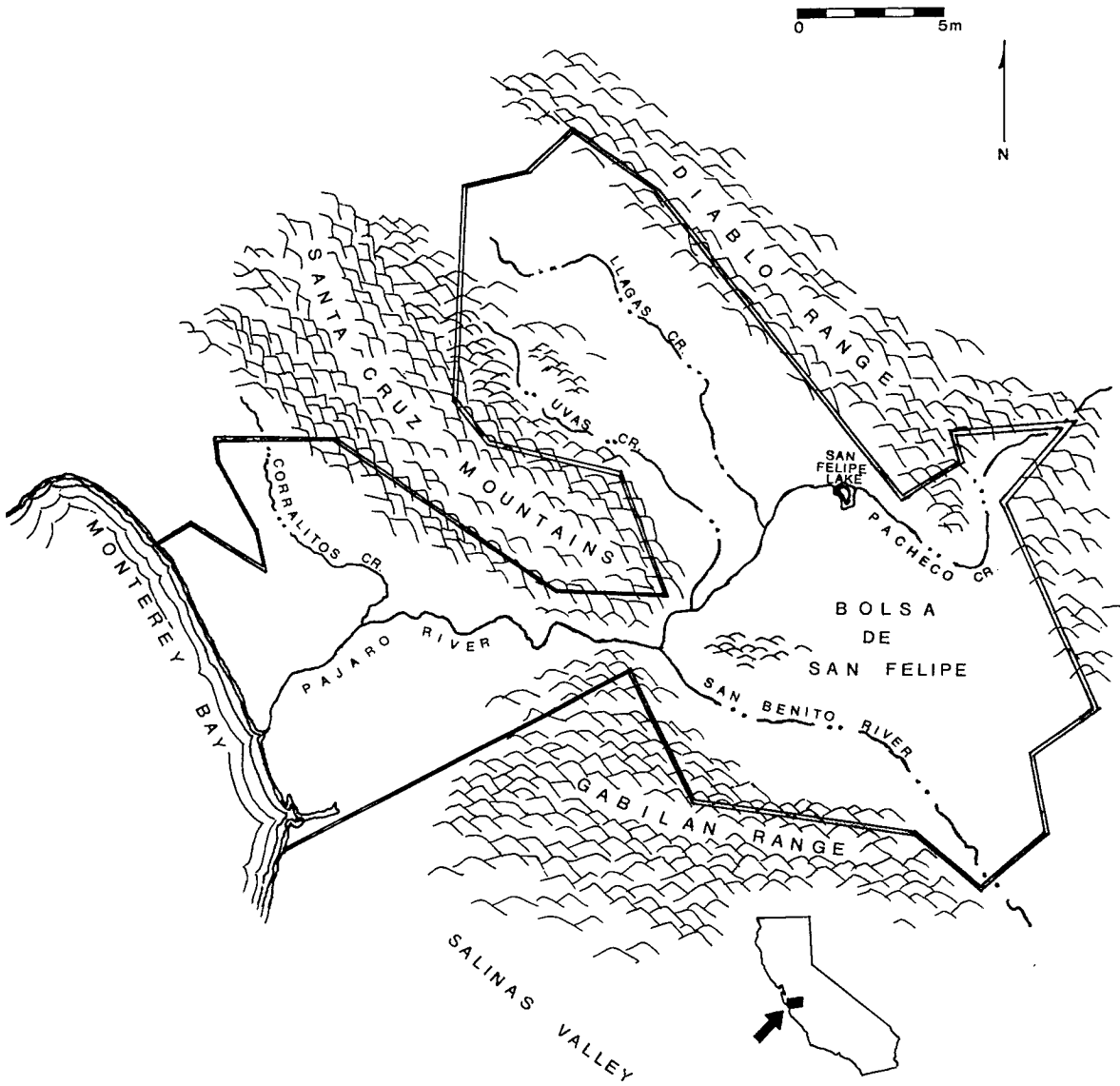
The San Felipe project area includes the lowland drainages of the Pajaro River, which flows into Monterey Bay near Watsonville in Central California (Map 1). This includes the lower portions of Uvas and Llagas Creeks, which drain the southern Santa Clara Valley, the San Benito River and its tributaries to the south in the vicinity of Hollister and San Juan Bautista, and the Pajaro itself, which drains San Felipe Lake and the Bolsa de San Felipe through Pajaro Gap. The northern end of the project area, near Morgan Hill, is about 25 miles south of the southern tip of San Francisco Bay; on the southwest the project area fronts on Monterey Bay, and on the east it is abutted by the Diablo Range which separates it from the Great Central Valley.

General Physiography

The California Coast Ranges are parallel NW-SE trending low mountain ranges that lie between the Pacific coast and the Great Central Valley. Between these ranges lie valleys of various widths and lengths, drained by rivers and streams that break through the mountains to the coast through relatively narrow canyons. The bulk of the San Felipe study area consists of such a valley system. The Santa Clara Valley system is the southern portion of the large trough whose lower northern end is occupied by San Francisco Bay. A low divide in the vicinity of Morgan Hill, at the north end of the study area, separates the San Francisco Bay drainage from that of the Pajaro. The southern Santa Clara Valley is a broad, level to gently sloping plain bounded on the east by the Diablo Range, on the northwest by the Santa Cruz Mountains, and on the southwest by the Gabilan Range. The Pajaro River has its source at San Felipe Lake at the foot of the Diablos, and flows southwest across the study area to Pajaro Gap or Chittenden Pass. Through this canyon, which it has cut between the Santa Cruz Mountains and the Gabilans, the river flows out onto the coastal plain and enters Monterey Bay. Before entering the Gap the river receives inflow from Llagas and Uvas Creeks, which drain the valley from the north, and from the San Benito River from the southeast (Map 1).

MAP 1

LOCATION & TOPOGRAPHY



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Environment

The floor of the southern Santa Clara Valley today is largely given over to agriculture and grazing. Scattered marshes and stands of oaks indicate something of the preindustrial environment, which will be discussed at length below. The lower eastern slope of the Santa Cruz Mountains is characterized by oak woodland and chaparral, with redwood forest beginning in the higher elevations. The Diablo Range tends to be treeless and grass-covered, with scattered oaks in some localities and riparian species along the drainages. Although the Gabilan Range is generally grass-covered, the drainages along the northeast face, such as San Juan Canyon, are well wooded with oaks and chaparral. The Watsonville subarea, like the floor of the Santa Clara Valley, is largely given over to agriculture.

Present Land-use

The core of the Santa Clara Valley north of the Pajaro River is used for intensive irrigation agriculture, while the fringes along the edges of the foothills to the east and west are given over to stock raising. Urban centers at Gilroy, San Martin, and Morgan Hill are gradually expanding, and low-density residential construction is spreading down along the hills from the metropolitan San Jose area to the north. South of the river irrigated tracts are somewhat more spotty, with a large percentage of the land in nonirrigated agriculture and pasture. Urban growth is proceeding slowly in both Hollister and San Juan Bautista. West of Pajaro Gap, the bulk of the plain around Watsonville is irrigated, the surrounding hills are being dry-farmed and grazed, and the City of Watsonville is spreading along the river and up the valley of Corralitos Creek.

Proposed Improvements

The San Felipe Division of the U. S. Bureau of Reclamation's Central Valley Project is a system of water conveyance, storage, and distribution facilities designed to supply supplemental water to the southern Santa Clara Valley and the plains around Watsonville. Originally designed to provide 293,000 acre-feet of water annually to the service area (Interior 1967), the San Felipe Project has recently been scaled down considerably in accordance with revised population projections for the area. Costs and other specifics pertinent to the revised project are now being evaluated, but no significant changes in routing are anticipated. The total service area, described in brief above, is divided into three subareas for planning purposes (Map 2); these subareas are defined as follows:

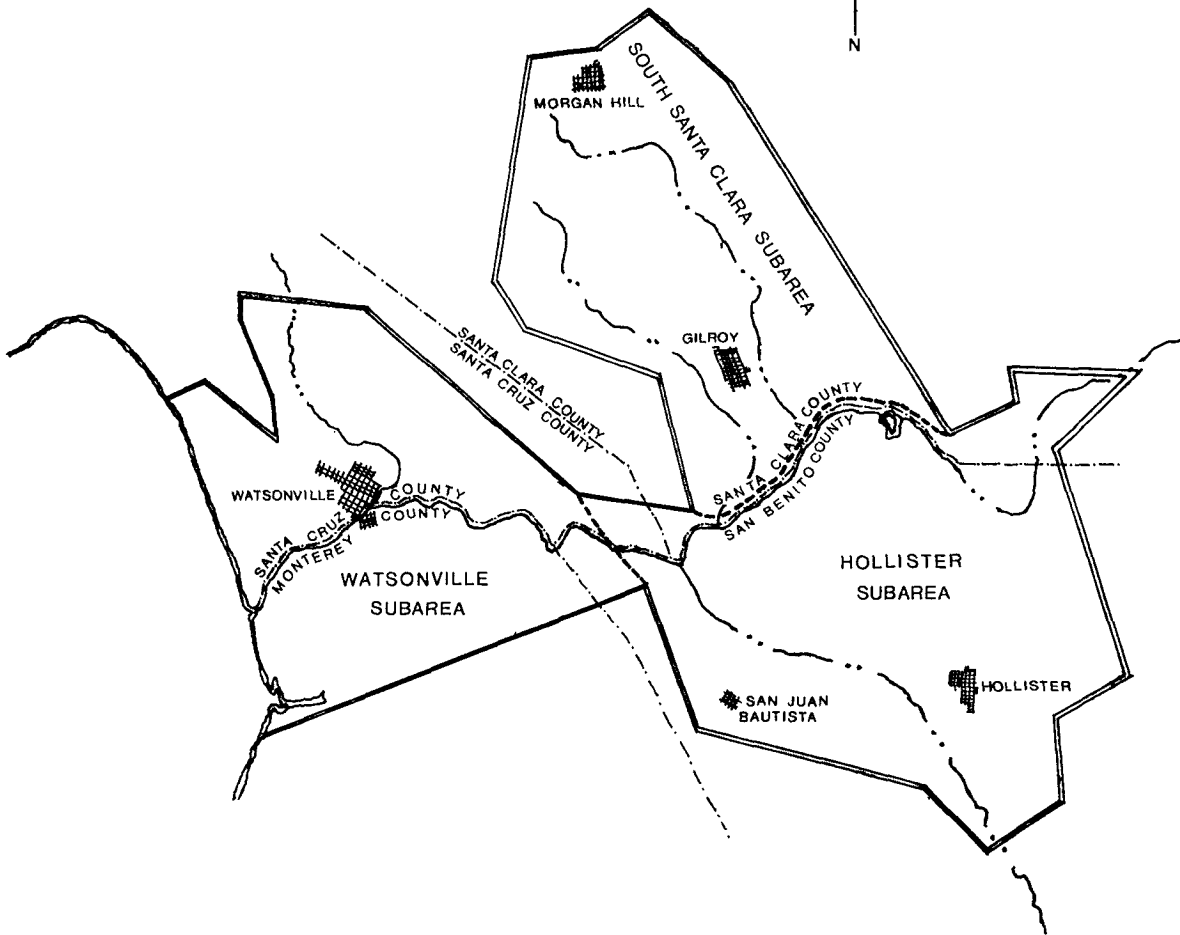
The South Santa Clara Subarea, comprising all the valley lands and adjacent foothills from Morgan Hill south to the boundary between Santa Clara and San Benito Counties; this is essentially the drainage basin of Llagas and Uvas Creeks into the Pajaro River.

MAP 2

COUNTIES, CITIES, SUBAREAS

0 5m

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The Hollister Subarea of San Benito County, including the San Juan and Hollister Valleys and the Bolsa de San Felipe, from Pajaro Gap to the Diablo Range and from the Pajaro River to the vicinity of Tres Pinos. This includes much of the area drained by the southern tributaries of the Pajaro River, Pacheco Creek, and the San Benito River.

The Watsonville Subarea, including the coastal terraces on both sides of the Pajaro River around the city of Watsonville, in Monterey and Santa Cruz counties.

The planned facilities themselves (Map 3) include the following:

The Pacheco Tunnel will carry water through the Diablo Range from San Luis Reservoir to the Pacheco Creek drainage, where it will enter the Pacheco Canal. Near the opening of the Pacheco Canyon into the Santa Clara Valley, the Pacheco Pumping Plant will push water northward through the Santa Clara Canal to Coyote Afterbay at the foot of Anderson Dam. Another branch of the canal will trend southwest in two segments: the Hollister Relift Canal will run along the foot of the Diablos to Hollister Reservoir near the city of Hollister, while the Hollister Watsonville Conduit will run parallel to the Relift Canal as far as Hollister, then break away along the north side of the Flint Hills to Hudner Reservoir. From Hudner the conduit will proceed northwesterly along the north face of las Lomerias Muertas to Pajaro Gap and then down the Pajaro to Watsonville. The San Juan Bautista Canal will cut off from the conduit east of Hudner, to service the mouth of San Juan Canyon. The Watsonville South Canal will begin at the west end of the conduit and proceed south to the vicinity of Moss Landing.

By bringing in a significant non-local water supply, the San Felipe facilities will permit some major changes in land-use. In Hollister subarea, approximately 16,000 acres of irrigable land, 32% of all irrigable land in the subarea, was not irrigated as of 1967 (Interior 1967), and the San Felipe facilities would make irrigation possible. In the South Santa Clara subarea the situation is a little different, because the subarea is experiencing rapid urban growth. In 1967 it was projected that:

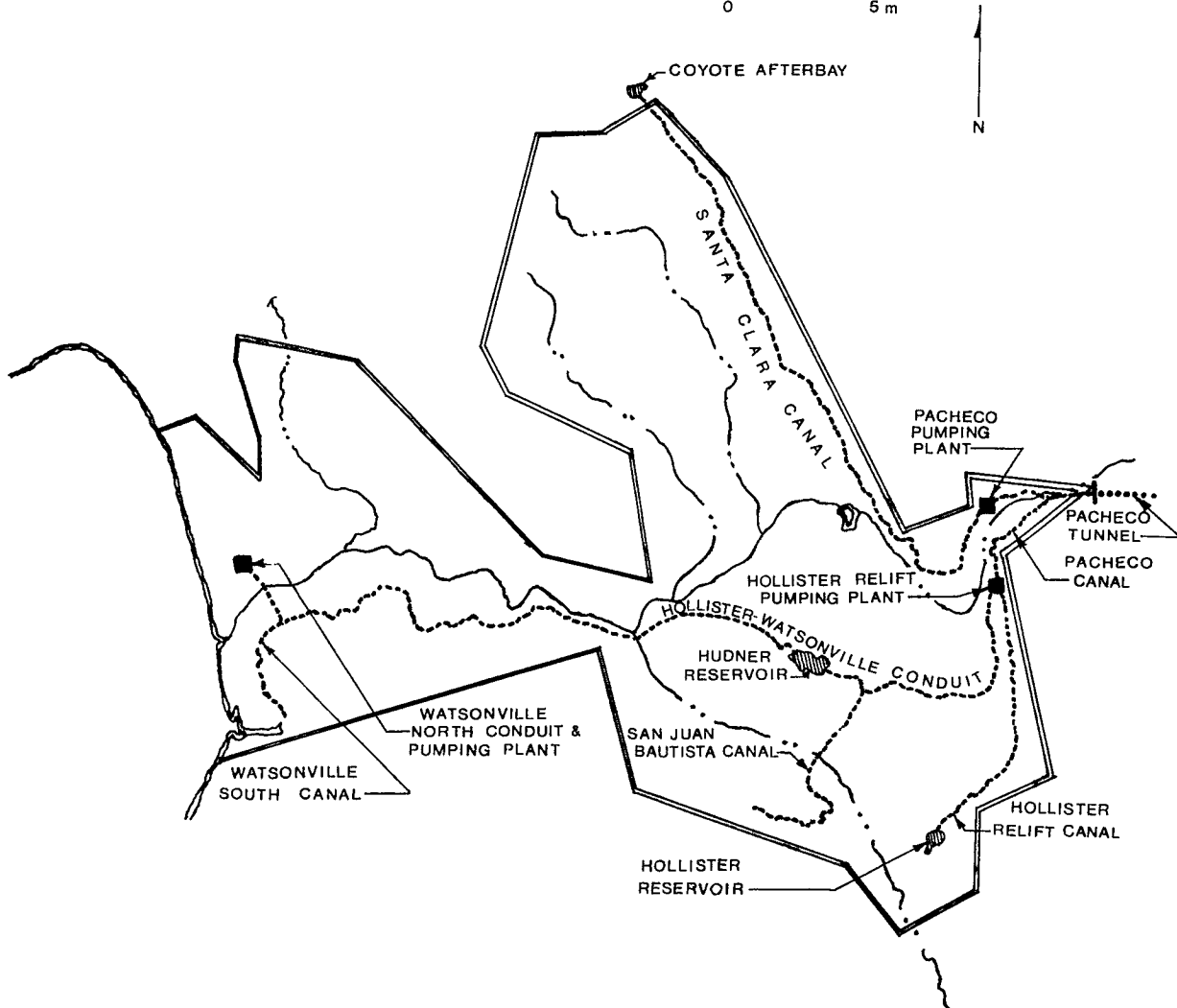
"(w)ithout the project, future urban growth would necessarily take place on the valley floor, as in the North Santa Clara subarea (i.e., San Jose), to obtain the ground water supply, or, if located in the foothills, would derive its water from the existing ground water supply and eliminate irrigated agriculture. With project water supplies there will be opportunity for urban development on nonirrigated land in the foothills around the valley areas." (Interior 1967)

New irrigation of about 7000 acres was predicted as a result of the project in 1967, but local growers inform us that low density housing has spread along the nonirrigated east side of the valley to a degree which has seriously diminished the potential for irrigating large tracts.

MAP 3

PROJECT FACILITIES:
SAN FELIPE DIVISION

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Thus it appears that San Felipe water will serve residential users to a considerably greater extent in the South Santa Clara subarea than it will agricultural operations. In the Watsonville subarea the imported water will serve both urban and agricultural needs, helping solve a problem of salt water incursion into the water table as well (Interior 1967).

The Study

The San Felipe Project was brought to the attention of the Bay Area Archaeological Cooperative and the Society for California Archaeology by Professor Kenneth Colson of West Valley College in 1972. Colson contacted the Bureau of Reclamation about the archaeological element in its planned Environmental Impact Statement and continued to coordinate archaeological interests with those of the Bureau, the National Park Service, and local agencies as the project developed. In accordance with NPS policy, California State University San Francisco was brought in early in the specific planning phase to serve as a lead institution. Close cooperation was maintained throughout the project among West Valley, California State University San Francisco, and the Santa Clara County Archaeological Society; this cooperation not only insured an efficient project, it also set the stage for future cooperation among the three institutions in the continuing job of preserving San Felipe area archaeological resources.

The specific responsibilities of the project, as defined by the National Park Service contract, comprised:

1) An intensive physical reconnaissance of the actual rights-of-way and facility sites, to identify archaeological resources subject to direct impact and develop plans for mitigation of such impact.

2) A systematic sample reconnaissance of the Hollister and South Santa Clara subareas, to develop a basis for predictions about the general distribution of archaeological resources. On the basis of these predictions, it would be possible to suggest where conflicts might arise between the requirements of archaeological resource protection and the changes in land-use that will occur as a result of the San Felipe system. These conflicts would be a part of the indirect impact of the system.

3) Discussions with organizations and planning bodies currently or potentially concerned with archaeological preservation, to design means of mitigating the indirect impacts of the system.

4) Interpretation and evaluation of the data resultant from the study in terms of federal and state law and the overall scientific requirements of California archaeology. This operation would provide an essential basis for the mitigation recommendations (Moratto et al 1973).

It should be noted that our contract specifically did not include identification or evaluation of indirect project impacts in the

Watsonville subarea, since in the opinion of the National Park Service no major changes in land-use could be identified as concomittants of the project in this subarea (Anderson 1973). Inevitably some data were accumulated in the course of the study that pertain to the general distribution and significance of archaeological resources in the Watsonville subarea, so we have used these data to prepare a cursory evaluation of archaeological planning needs in the subarea (Appendix V). It should be recognized, however, that this evaluation is based on much less systematic and thorough research, and much less intensive contact with county and city agencies and local organizations, than are the evaluations of the South Santa Clara and Hollister subareas.

CHAPTER II

ARCHAEOLOGY AND GENERAL PLANNING

Summary

Archaeological resources are public resources, but plans for their protection in the public interest tend to be poorly organized and haphazard. This report is the first in California to attempt a regional analysis not only from an archaeological point of view but with the needs and abilities of the various public agencies concerned in mind. Prior to our study, very little was known archaeologically about the study area. We began with a clean slate and attacked the problem of archaeological site location and evaluation using archival data, interviews, and systematic field reconnaissance. Our purpose was to create:

- A) a taxonomy of archaeological resources, a map showing where as many types of resources as possible might be expected to occur, and descriptions of resources not mappable at present, with recommendations for further study
- B) bases for evaluating local archaeological resources
- C) recommendations about ways to manage archaeological resources, pursuant to the provisions of Executive Order 11593 and as consistent as possible with extant federal, state, and local policy.

This chapter also provides definitions of key terms used throughout the report.

Archaeological Resources

Archaeology is a social science. Its purpose is to study and arrive at predictive generalizations about human behavior.

Predicting the future and understanding mankind are obviously matters of significance for all people, and it is thus in the public interest to preserve archaeological sites for scientific study. Systematic regional planning for the preservation of such sites is a rare phenomenon, however.

The main problems in designing a plan for archaeological management are:

- a) explicitly defining the nature and distribution of archaeological resources;
- b) establishing the significance of the resources, both to science and to the public at large;

- c) discovering means for the protection, study, and interpretation of a sample of the resources that satisfies the needs of science and the public.

The San Felipe Archaeological Study is an attempt to address these problems in the southern Santa Clara Valley.

Organization of the Study

The purposes of our study required that we address ourselves to several explicit types of questions:

- A) What is the general distribution of historic and prehistoric sites? What kinds of sites are there and where are they likely to occur? Which are sensitive to environmental constraints, and therefore predictable from environmental data, and which cannot be mapped without further study?
- B) What are the various kinds of sites good for? What questions about human social behavior can be answered using them? Which may be sacred or of special interest to particular groups? Which might be amenable to public interpretation?
- C) What is the federal, state, and local administrative context within which the mandate of Executive Order 11593 must be fulfilled? In other words, how can archaeological preservation be effectively worked into the machinery of federal, state, and local government agencies pertinent to the project area?

To answer the questions listed under A above, we undertook the following operations:

1) Examination of archival and documentary sources. Archaeological site data files maintained by the Archaeological Research Facility, University of California, Berkeley, the Archaeological Survey at West Valley College, the Society for California Archaeology's District Archaeologist, Mr. Robert Edwards, and the Monterey County Archaeological Society were checked. The accounts of early travellers through and settlers in the area were inspected for data both on Indian and non-Indian sites and on the natural environment. Records of San Juan Bautista, Santa Cruz, and Santa Clara Missions were analyzed for the locations, population, and organization of local Indian groups. Historic documents were studied for information on old town sites, ranchos, etc.

2) Consultation with local interests. Farmers, ranchers, members of historical societies, artifact collectors, and other provided valuable information, particularly on historic sites and on sites that have been damaged or obscured, or from which subsurface information has been obtained, in the course of agricultural operations and urban growth. We attempted to contact as many interested local citizens

and groups as possible within our time-limit, as well as to consult with local institutions and professional archaeologists.

3) Field reconnaissance. The rights-of-way of all aqueducts and the sites of all reservoirs and pumping plants were inspected in detail by ground survey teams. Auger borings and test excavations were made where necessary, though the latter were avoided wherever possible because of the danger of thus encouraging local people to dig in archaeological sites. The results of these operations are presented in Part II (King 1973). For general planning purposes, a systematic sample of the entire area was inspected. Our initial instructions from the National Park Service had been to inspect 3200 acres in the Hollister Subarea and 1400 acres in the South Santa Clara Subarea - this acreage constituting a 20% sample of the lands in each subarea expected to be brought under irrigation as a result of the project. This approach turned out to be unrealistic, however, because:

- a) It did not provide a basis for understanding the whole aboriginal settlement system, including segments of the system that might occur outside the irrigable area, and thus for predicting where archaeological sites would occur.
- b) Given the relatively low density of prehistoric sites in the study area, intensive survey of a small portion of irrigable land would have been unlikely to have given us a good sample even of sites subject to irrigation impact.

For these reasons, we undertook a more extensive, and somewhat more cursory, reconnaissance than would otherwise have been the case. A sample including 4400 acres in the South Santa Clara Subarea and 7400 acres in the Hollister Subarea was inspected. The sampling system used was similar to that proposed by Plog and Hill (1971) except that in our case local plant communities have usually been so severely modified that they cannot be used to help stratify the sample. Had we been able to conduct our paleoenvironmental analysis beforehand, its results could have been useful; lacking these data, however, we chose to sample a set of maximally dispersed, objectively selected stream drainages of various ranks. To achieve maximal dispersion we regarded each USGS 7.5' quadrangle covering a portion of the study area to be a subuniverse. In each subuniverse, streams within the study area were ranked by size within drainage, according to the system proposed for archaeological use by Plog and Hill (1971:17). At least 25% of all streams of each rank in each quadrangle was then inspected. In the foothills, all ground surfaces between the crests of the ridges bounding the drainage basin were inspected; on the valley floor the reconnaissance pattern was significantly controlled by agricultural practices; inspecting a levelled, irrigated tomato field is seldom profitable and often impossible. As a result, some sample on the valley floor were limited to the banks of streams and adjacent dirt roads.

In addition to the systematic reconnaissance, all locations where archaeological sites had been reported or suggested by documentary sources or informants were inspected where possible.

Evaluating the significance of archaeological resources (B above) raises some difficult problems. Obviously all archaeological sites are significant in some respect, since all such sites contain data that is likely to aid in understanding human behavior. Obviously, too, however, all archaeological sites are not of equal importance. We know of no really satisfactory way of objectively establishing archaeological significance, especially in a region like the San Felipe project area, where so little research has been done that almost no basis exists for projecting what kinds of data a given site may contain. We approached the problem in several ways:

For prehistoric sites, we utilized a very general research design now in use by the Bay Area Archaeological Cooperative. From this design, once we had begun to develop an idea of what different kinds of local sites might contain, we derived somewhat more specific research questions, and then analyzed each site or site-type relative to these questions.

For historic sites, we generated several research questions that reflect our anthropological interest in economic change and its social and spatial concomitants. Previous local work by Broek (1932) was especially useful in this respect. These questions provide a crude basis for classifying historic sites and deciding what sort of sample of such sites ought to be saved for future research.

To provide a balance for the estimates of significance based on our own professional training and predilections, we also tried to ascertain and include in our recommendations the community value of historic and prehistoric sites. To do this we attempted to contact local historical societies and others with an interest in historic preservation and to include their recommendations in our own. We also evaluated sites wherever possible with an eye toward public interpretation, and regularly considered the pertinence of our recommendations to the stated and implicit interests of California's Native American population (cf. Task Force 1973; Ad Hoc Committee 1973).

To ascertain the legal and administrative context within which recommendations for impact mitigation might be implemented (C above), we analyzed state, regional, county, city, and district general plans and environmental impact guidelines, and consulted wherever possible with the persons or agencies most concerned with resource management and planning in the communities of the project area. Our recommendations, we feel, reflect the best available integration of local needs and professional requisites with federal and state law and policy.

Definitions

Throughout this report, we use terms that are familiar to archaeologists but not necessarily so to others, and terms that are defined in different ways by different archaeologists. The following words and phrases, we think, require definition:

Archaeology: A social science concerned with understanding human behavior by studying how social groups have responded to situations in the past. California archaeologists tend to study relationships between Man and environment. One group of archaeologists in southern California, for example, is studying what happened to people living around a large lake in the desert, when the lake dried up about 500 years ago. They hope to be able to test general ideas about human responses to rapid environmental degradation.

Context: The relationships among archaeological objects in and on the ground. It is primarily from the context of artifacts and other objects that archaeologists derive their information. Comparing objects found with different human burials or in different buried houses, or simply in different parts of a site, permits archaeologists to make educated guesses about the relative social positions of different people in the community, their economic specializations, etc.

Archaeological Site: Any location where people have done something in the past and left something from which useful information can be derived. An archaeological site consists of artifacts, debris, and soil in contexts.

Historic: An archaeological site as discussed herein is historic if it represents for the most part occupation or use by any population after the general missionization of the study area at the end of the 18th century. Arbitrarily, we treat sites created after about 1940 A.D. as nonhistoric.

Prehistoric: A prehistoric site, conversely, is one that was apparently occupied for the most part prior to missionization. By definition, prehistoric sites in the study area are sites utilized by California Indian populations.

Significance: The scientific significance of an archaeological site depends primarily on the amount and kinds of information it is thought to contain. "Archaeological sites" created yesterday (a new subdivision, for instance) are of little significance because they contain little information not already recorded. Some historic and prehistoric sites are insignificant for the same reasons, but this is rare. By and large, every archaeological site has some value for research. The specific scientific significance of a particular site must be defined in terms of the site's potential relationship to current or projected research needs.

The community significance of an archaeological site depends on the site's relationship to the perceived values and needs of the community in which it exists or to which it has pertinence. An old house that may have little scientific value may be of considerable community significance if it is being considered for restoration as a museum, if it is associated with a unique or important event or persons, etc. A cemetery or a ceremonial site may be of considerable community significance because of its religious sanctity, apart from any scientific significance it may have.

Archaeological Research: A systematic attempt to learn something about the past by studying archaeological sites. Some archaeologists study modern supermarkets and housing tracts, but most concern themselves with earlier historic and prehistoric sites. Research is likely to be aimed at some fairly discrete local problem ("how long did people live here and how did their economy change through time?") that is thought to relate to some larger scientific question ("why does large-scale economic change occur in a stable environment?") Research may include archival studies, surface reconnaissance, controlled sample excavations, and detailed analyses of artifacts and their contexts, waste material, soils, charcoal, rocks, trace elements, etc.

Salvage Archaeology: Archaeological research conducted on sites in danger of imminent destruction. Salvage is a large-scale operation designed to "clear" the archaeological resources so that the project that endangers them can proceed. In salvage, the archaeologist tries to do the best research he can while accumulating enough general data about the site to reconstruct on paper a picture of what is destroyed.

Test Excavation involves the excavation of a few "test units" - small pits dug to determine site size, depth, or gross internal composition. If the test is a prelude to salvage or if the site has already been severely damaged, mechanized equipment such as back hoes are sometimes used.

Artifacts: Any portable object used and/or modified by Man. Some common examples mentioned in this report include:

Metate: A flat-to-basin-shaped stone grinding tool, primarily used in processing small hard seeds (Fig. 1a).

Mano: A small loaf-shaped stone used on the metate (Fig. 1b).

Mortar: A stone bowl, normally used in processing pulpy plants (Fig. 1c). Mortars may be portable or ground into the bed-rock.

Pestle: A long conical-to-cylindrical stone, used for crushing foods in mortars (Fig. 1d).

Projectile Point: An arrow, spear, or dart tip, usually of stone (Fig. 2a,b,c).

Flake: A chip knocked off a stone during production of a tool. Flakes are often "retouched" (i.e., flaked along the edges) to form cutting and scraping tools (Fig. 2d,e).

Core: A stone from which flakes have been struck. Often retouched and/or used as a hammer, chopper, or plane (Fig. 2f,g).

Midden: Many California archaeological sites are "middens": areas of rich organic soil full of food debris, artifacts, fire-cracked rocks, etc. Technically, a midden is a garbage heap, decomposed into rich, usually dark-colored soil.

Adaptation: Adaptation is the process by which a population adjusts to its natural and social environments, and to changes in such environments.

Tribelet: Tribelets among local Indian groups were named, land-holding sociopolitical groups. Usually each tribelet had a major village and various smaller or tributary settlements, and held some definite, recognized territory.

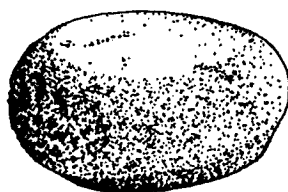
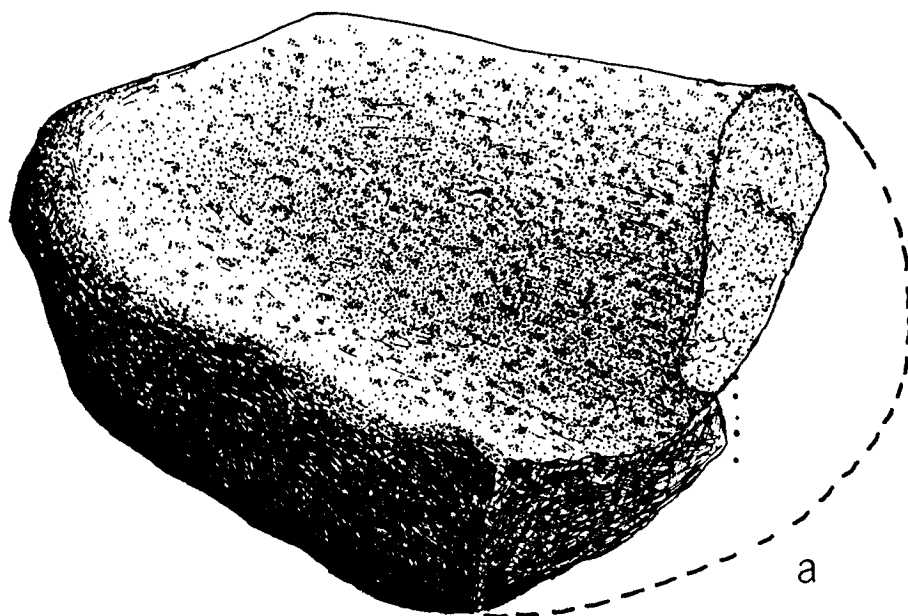
Sedentary: A sedentary settlement is one whose population remains substantially in one place year-round, rather than shifting its residence or breaking down into small/ dispersed groups at various seasons.

Catchment: The catchment is the area around a settlement that can be efficiently used for day-to-day food-gathering (Vita-Finzi and Higgs 1971). For prehistoric California Indians, this is the area within roughly one hour's walk of the settlement.

Circumscription: A condition of boundedness, in which because of geographical or social conditions a population cannot significantly change the size or location of its territory.

The National Register: The National Register of Historic Places is a list being compiled by the federal government, which is eventually intended to include all significant historic and prehistoric sites, structures, and districts in the nation. The Register at present is very incomplete and should not be considered a comprehensive roster for planning purposes. It was one of our contractual responsibilities to identify sites and districts in the study area that might qualify for the National Register.

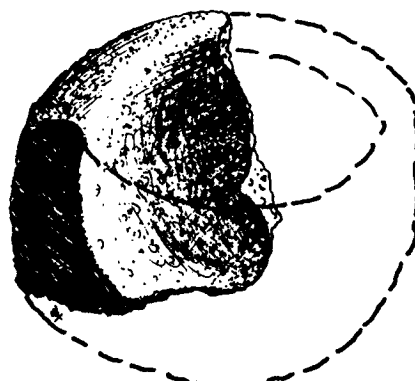
Sites and districts listed on the National Register are not subject to any kind of federal control, except that before a federal or federally assisted project can be permitted to damage such a site or district, the agency responsible must consult with the National Advisory Council on Historic Preservation. Limited matching funds are also available to local agencies from the federal government for the acquisition and protection of National Register properties, and consideration is being given on various levels of government to authorizing tax reductions on properties listed on the Register. A copy of the National Register can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.



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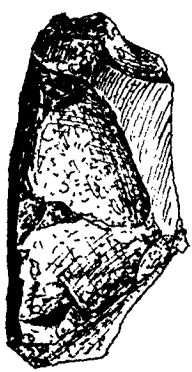
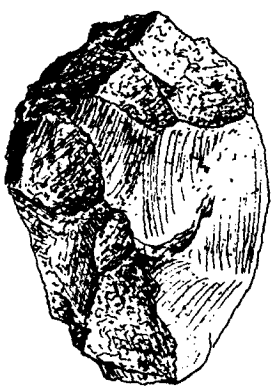
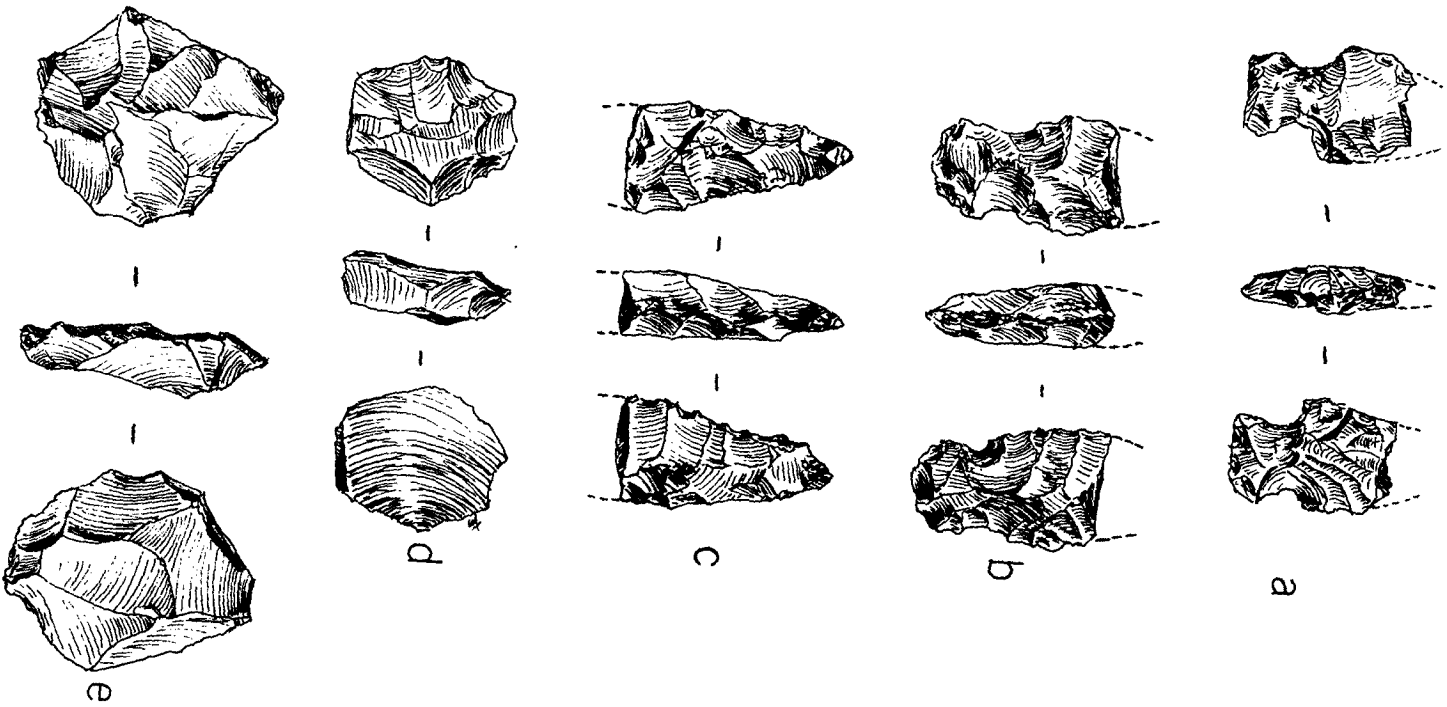


c

GROUND STONE

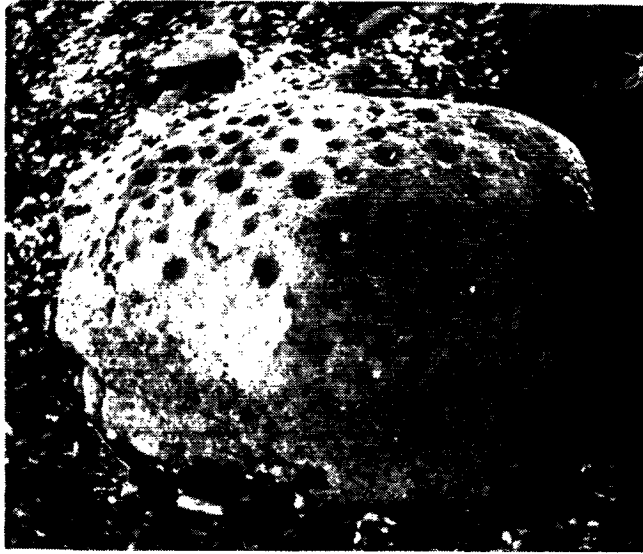


FIGURE ONE



FLAKED
STONE

FIGURE TWO



2: THE RESOURCES



Above: Petroglyph at site
Tres Pinos-3

Left: 1892 house on site of
San Antonio "Ranchito", San
Juan Bautista

CHAPTER III

PREHISTORIC ARCHAEOLOGICAL RESOURCES

Summary

Only a few archaeological sites had been recorded in the southern Santa Clara Valley prior to our study. Only three excavations are known, all of which were minor and only one of which has thus far resulted in a report. Field work in adjacent areas has begun to increase lately as archaeologists have become increasingly organized.

A first step toward understanding prehistoric settlement patterns is understanding the pre-agricultural environment. Historic accounts and modern soils and plant communities provide a basis for reconstructing the extensive marsh, oak woodlands and grassy hills that once characterized the study area.

Ethnographically, the entire study area was occupied by speakers of a Penutian language called "Costanoan" by the Spanish and "Ohlone" by modern descendants of native speakers. Mission records provide a basis for calculating the locations, sizes, and populations of tribes within the general "Ohlone" nationality.

Over 50 prehistoric sites were recorded during field reconnaissance operations, and several others were reported to us but not visited for various reasons. These sites can be conveniently broken down into three general classes: large occupation sites, small occupation sites, and special use sites. At least two major time periods may be represented, though the data are equivocal. All three site types appear to be generally correlated with features of the physical environment. This provides a basis for predicting where different kinds of sites are likely to occur.

Previous Archaeological Research

Previous archaeological research in and around the San Felipe project area has been very limited. 27 prehistoric sites are on record with the Archaeological Research Facility at the University of California, Berkeley for the project area, 20 of which are along Monterey Bay at the edge of the Watsonville subarea. The Berkeley records are primarily the results of sporadic surveys and miscellaneous reports by the public, and most are 20 or more years old. They cannot be trusted to reflect accurately the nature of archaeological resources in any portion of the area.

In 1968 an excavation was carried out by students from Cabrillo College, Aptos, under the direction of the late Gordon O'Bannon, at 4-SC1-57 on Uvas Creek near Gilroy. Notes and collections apparently became scattered after O'Bannon's death.

Burials encountered during subsoiling at Casa de Fruta, site San Felipe-5 on Pacheco Creek, were salvaged by Mr. Robert Edwards and students from Cabrillo College in 1971. Data from this site are currently under analysis.

Clemmer (1961) reported sample excavations in the neophyte Indian quarters at San Juan Bautista. Clemmer recommended more extensive research, which has never taken place.

Since the formation of the Bay Area Archaeological Cooperative in 1971, the intensity of archaeological fieldwork has increased considerably in the South Bay/South Coast Ranges, though few researchers have directly addressed the archaeology of the San Felipe project area per se. In consonance with a general research design presented in Appendix III, Cabrillo and West Valley Colleges have instituted significant field programs in areas immediately contiguous to the project area. Notable among these are surveys and a major cooperative excavation in the Santa Cruz Mountains by Cabrillo College, the University of California, Santa Cruz, and California State University, San Francisco (Roop n.d.), surveys along Coyote Creek by West Valley College, and salvage excavations in the Almaden Valley and at Saratoga by West Valley College and the Santa Clara County Archaeological Society (L. King n.d.).

Other studies in areas contiguous with the project area, which will be discussed as appropriate below, include the work of Olsen and Payen (1968, 1969) and Pritchard (1970) at San Luis and Little Panoche Reservoirs, surveys by G. Breschini of the Monterey County Archaeological Society on Monterey Bay, a small Environmental Impact Report Survey by Dietz (1973) near Moss Landing, a study of the Pinnacles National Monument by Olsen, Payen and Beck (1967), and a survey of enlarged Chesbro Reservoir by Conger and King (1968).

Studies pertinent to archaeological research underway in areas immediately adjacent to the project area simultaneous with our study include the Coyote Creek Project of Holman and others (1973), and an incomplete archaeological study at Oceanic California's Lake Anderson Development (URS 1972; see Appendix IV).

Reconstructing the Aboriginal Environment

Some understanding of the southern Santa Clara Valley pre-agricultural environment is necessary both for basic interpretation of the archaeological record and for archaeological planning purposes. If we can ascertain what environmental resources were present and determine relationships between the distribution of these resources and the distribution of archaeological sites, we will have a key to aboriginal land-use and economics. Additionally, if the environmental variables are easily identifiable and if correlations with archaeological site locations are good, we will have a basis for predicting where general areas of archaeological sensitivity will occur.

The San Felipe project area has undergone considerable environmental transformation since its settlement by whites. The water table has been lowered, marshes have been drained, creeks channelized, and woods and grassland replaced by cities and farms. We attempted to reconstruct the pre-existing environment, as shown in Map 4, by following several lines of evidence:

1) Present plant communities: Some existing plant communities have presumably been little altered since prehistoric times. Oak woodland, for example, may be cleared, but it is rarely replanted; thus, areas now supporting oak woodland can be assumed to have done so in the past. The same applies in general to evergreen forests and riparian communities.

2) Early first-hand accounts: Five Spanish expeditions crossed the study area in the late 18th century (Map 5). The diaries of Fages (1770 and 1772), Crespi (1772), Palou (1774), Dante (1775), Sal (1775), Anza (1776) and Font (1776) provide data on the condition of the environment during various seasons before significant white intrusion.

3) Secondary sources: Several extant research works touch upon the pre-contact environment. Studies by Broek (1932), Patri (1970) and Chatham (1962) are especially useful.

4) Soils: In reconstructing the marshes and levees on the valley floor, the distribution of soil classes as mapped by the U.S. Soil Conservation Service provided basic guidance.

5) Informants' accounts: Local people who have lived on the land for many years provided important descriptions. Such descriptions were obtained by first-hand elicitation and by checking transcripts of earlier interviews by such students as Milliken (n.d.).

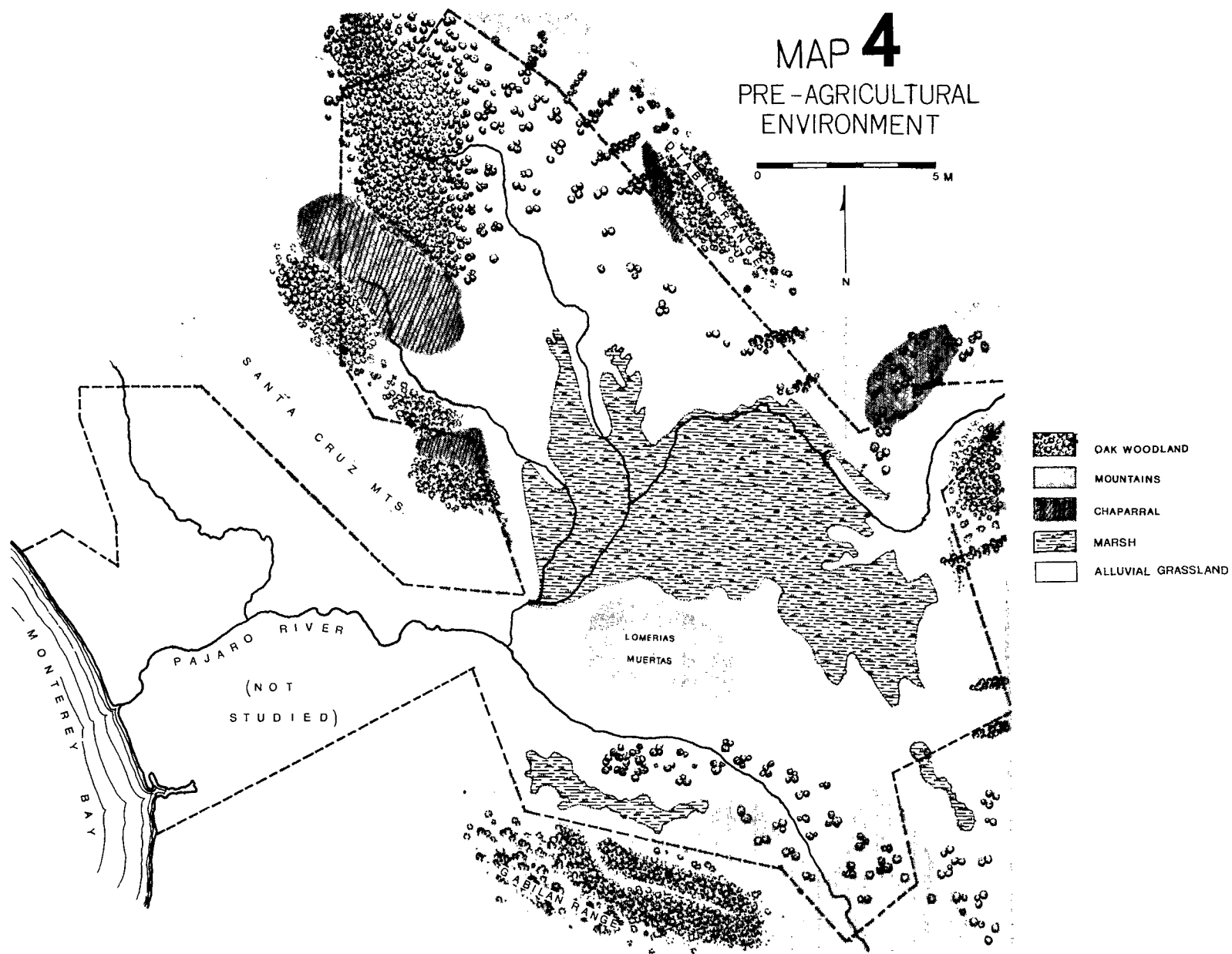
Distribution of Marshland

Some areas of marsh, swamp, and lake remain in a natural state within the project area. San Felipe Lake is the major remnant body of open water; it is surrounded by tule marsh, which extends south for some distance along Tequisquita Slough. Remnant marshes also occur north, east and west of San Juan Bautista and in spots across the Bolsa de San Felipe.

The several 18th century explorers who crossed the study area (Map 5) provide the following information, organized by month.

In November of 1770 Don Pedro Fages crossed the study area. He found only a little water in San Juan Creek (Bolton 1911:147). In the Hollister Valley he saw "many herds of antelope" and many geese. He records Pacheco Creek as being heavily wooded with oak. Moving west from the mouth of Pacheco Creek, he was:

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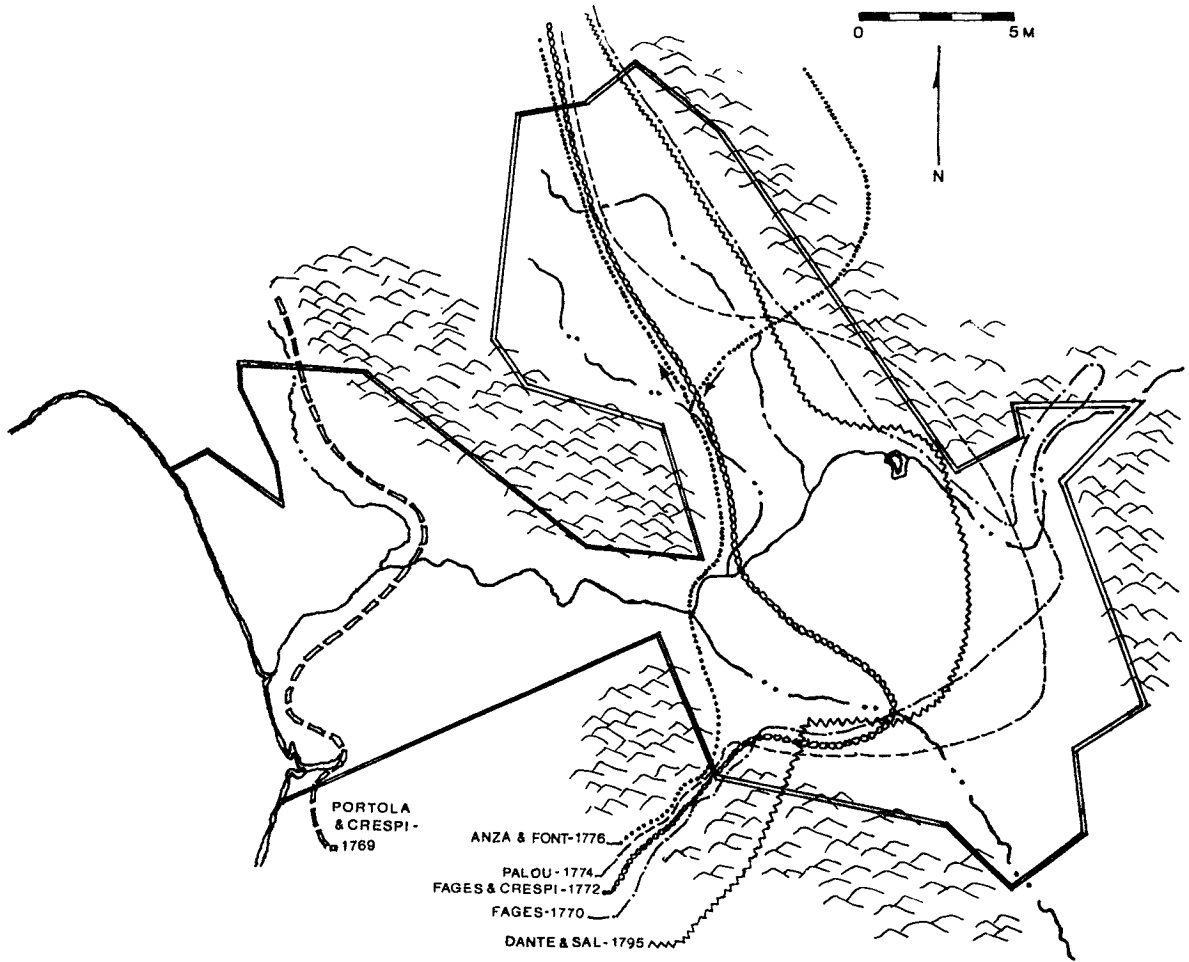
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MAP 5

ROUTES: 18th
CENTURY
EXPLORATIONS

0 5 M

N



"... passing along the foot of the hills which encircle it (the valley) on the right, and leaving on the left many reed patches crossed by numerous bear trails." (Bolton 1911:149)

San Felipe Lake was full upon his arrival, and to the west or southwest was a plain (Bolton 1911:150).

The general impression we get of the Bolsa region in the fall of 1770, then, is of a reedy plain with pools of water, many flocks of geese, and large antelope herds.

Fr. Francisco Palou passed through the project area in late November, 1774. On the 24th his expedition descended San Juan Canyon, which he describes as wooded with oaks. Reaching the canyon mouth they found that the creek sank into the ground. Camping for the night, they proceeded to the east-northeast on the 25th, along San Juan Valley to the Hollister Valley, where they found the way blocked by a large marsh. Detouring to the northeast across the valley, they travelled along the base of the Diablo Range, where they found "good arable land, with good pasture" (Bolton 1926:255). Crossing Pacheco Creek (sic: "Santa Ana, alias el Pajaro"), they ascended the hills above San Felipe Lake, which Palou describes as grassy and almost without trees. From the hills they saw "one large lake with a great deal of water and two others dried up" (Bolton 1926:257), and then descended in the vicinity of Gilroy. The Gilroy area is described as good land but with alkali patches where nothing grows. Passing on to the north, Palou left the area on the 25th.

From Palou, then, we learn that in the fall of 1774 - apparently a dry fall, considering the dried-up lakes and the fact that he found Llagas Creek near Morgan Hill virtually empty (Bolton 1926:259) - there was an impassable marsh on the Bolsa de San Felipe which could be detoured around on good land by crossing the Hollister Valley, going up the east side, and crossing the hills north of Pacheco Creek. In the same season the Gilroy area was apparently fairly dry, with dried-up ponds.

Danti and Sal crossed the area in December, 1795. Their rather confused account has not yet been translated, but their enthusiasm over water resources suggests that the area was quite wet (Danti 1795; Sal 1795).

In March of 1772 Fages and Crespi crossed the Gabilan Range at San Juan Canyon and camped near the mouth, east of the future site of San Juan Bautista. Proceeding out on March 22, the expedition encountered "miry marshes" (Crespi: Bolton 1927) and had to detour, apparently to the northeast. Fages (Treutlein 1972) describes the San Juan Valley as an oak woodland. Entering the Hollister Valley, the expedition turned toward the northwest, apparently along the north face of the Flint Hills and Lomerias Muertos. Of the Hollister Valley (Bolsa de San Felipe), Crespi says:

"The land is very good, with abundant pasturage, and it has innumerable lagoons of fresh water.... The valley has several arroyos of good running water, whose beds are well grown with trees... but on the plain not a tree is to be seen, though they are all covered with grass." (Bolton 1927:282)

Fages (Treutlein 1972:344) describes the Bolsa in similar fashion. Crossing the Pajaro with difficulty just northeast of the Gap, Fages and Crespi describe the Uvas-Llagas area as follows:

"...thickly covered with grass. The streams were heavily grown with sycamores, willows, and some live oaks. On the floor of the valley we saw many cranes, geese, ducks ... and along its sides were several groves, and in the middle of it a considerable number of very large white oaks ..." (Fages (Treutlein 1972:344)).

"... many marshes and tule patches, with thousands of cranes and geese." (Crespi (Bolton 1927:283)).

North of Gilroy the expedition passed through oak woodland with many deer, leaving the project area on March 23rd.

The notes of the Fages-Crespi expedition thus indicate that in the spring of 1772 there was a marsh north of San Juan Bautista, oak woodland in the San Juan Valley, lakes and open grassland on the Bolsa de San Felipe, tule marshes in the middle of the Uvas-Llagas Creek drainage with oaks around the edges, and oak woodland on the plain north of Gilroy.

Anza and Font entered the project area down San Juan Canyon on March 24, 1776 but were able to cross San Juan Valley to the northwest, skirting las Lomerias Muertas on the west side along the Pajaro and thus missing the Bolsa de San Felipe.

Font describes the Pajaro as miry, and of the Uvas-Llagas area, says:

"This valley is miry and when it rains heavily it is for the most part a lake." (Bolton 1933:320)

He describes lagoons in the valley north of the Pajaro, with trees on their banks.

On their return from San Francisco, Anza and Font passed through the Gilroy Hot Springs area in the hills east of Gilroy, which Anza describes as "well covered with oaks, live oaks, walnuts, pine, and hazelnuts." (Bolton 1930:151)

Broek (1932), partly on the basis of the Spanish sources, describes the southern Santa Clara Valley as an open meadowland with willow thickets along the streams, in which surface depressions became impassable swamps in the rainy season. The Bolsa de San Felipe along Tequisquita Slough was a treeless, alkaline marshy area.

Chatham (1962) comments that the Bolsa de San Felipe today is characterized by heavy-textured soils of rather low productivity, "characterized by poor drainage and somewhat injurious concentrations of alkali salts." He reports great seasonal and annual variability in precipitation, which results in erratic flooding in the lowlands. Yazdanmehr (1950) describes the propensity of the Hollister Valley to flood as follows:

"In the main stream channels their bottoms are brought to successively higher levels by the deposition of gravel, until they are flowing in an elevated channel on a dike of their own creation and from this unstable position floods cause a shifting of their courses." (Yazdanmehr 1950)

Mr. Tom Hawkins, when interviewed in the field, reported that in about 1910 it was possible to row a boat from Dummeville to Gilroy. Mr. George White of Gilroy described similar flooding near Pajaro Gap in the 1950s. Maps on file at the Gilroy Historical Museum show extensive swamps north and south of the Pajaro between the Gap and San Felipe Lake.

In an attempt to plot the boundaries of the prehistoric marsh, soil maps for the project area (Isrig 1969; SCS 1968) were consulted. Since soil types as used by pedologists and engineers are not designed with paleoenvironmental reconstruction in mind, a rough grouping of soil types into more inclusive taxa was necessary. We combined types characterized by poor drainage, 0-2% slope, and alkalinity into one class, presumptively associated with marshy conditions. A contrasting class, generally typified by good drainage and nonalkalinity, but with slopes usually comparable to those of the first class, was proposed as representing marsh margins and levees. Class I in our taxonomy of soils include representatives of the Pacheco, Willows, Clear Lake, Metz, Campbell, Castro, and Sunnyvale series as well as San Ysidro loam 0-2% slopes (SdA), San Ysidro clay overwash (SeA) and San Ysidro loam, acid variant 0-2% slopes (SfA). Class II soils include Sorrento, Mocho, Yolo, Cropley, Zamora, and Pleasanton series plus San Ysidro loam 2-9% slopes (SdBA). Since the distribution of Class I soils approximates the distribution of marshes described in the historical sources, and since the distribution of Class II soils includes the travel routes of the Spanish expeditions when detouring around the marshes, we think it likely that the boundaries of Class I soils roughly approximate the boundaries of pre-contact marshy lands.

Santa Cruz Mountains

Patri (1970) describes plant communities in the Santa Cruz Mountains. The east side of the mountains, he says:

"... is dominated by extensive areas of chaparral and mixed evergreen forest Below the steep chararral-covered slopes was an extensive oak forest which was interspersed in some areas with grasslands ..." (Patri 1970:23-24)

Recent patterns of land-use have resulted in the decimation of the lower oak woodland as well as serious logging impacts on the high-altitude coniferous forest. The distribution of oak woodland, chaparral, and coniferous forest given in Map 4 is based on Patri's general vegetation maps and the Spanish expeditionary accounts quoted above.

Diablo Range

The lower west-facing slopes of the Diablo Range are primarily grass-covered except in the canyons and creeks, where narrow bands of oaks and riparian species occur (Chatham 1962). Chaparral occurs on shaded (north-facing) slopes (Broek 1932). Some of the interior canyons are densely wooded, as described by Anza in 1776 (Bolton 1930). Oak woodland becomes less restricted farther to the east (cf. URS 1972:Fig. 13), and a rather scattered coniferous forest occurs in high elevations along the crest of the range (Chatham 1962).

Gabilan Range

All sources (cf. Bolton 1927, 280; Chatham 1962) describe the Gabilan range as barren and grass-covered except in the drainages. Major streams on the northwest face, such as San Juan Canyon, are richly covered with oaks and chaparral.

Environmental Change

Jenkins (1973) has proposed that during the Pleistocene most of the study area was occupied by a freshwater lake whose shoreline lay at the 400' elevation (Map 6). If Pleistocene Lake San Benito existed, it is not known whether it was extant during the Wisconsin glaciation, when Man might reasonably be expected to have entered the area. Subsequent to the Pleistocene, Jenkins suggests that:

"The Sargent landslide undoubtedly at times moved down far enough to block the Pajaro River and to form a broad valley lake in the Bolsa and San Felipe Lake region." (Jenkins 1973:158)

While exact data are not available, therefore, we can assume that since Pleistocene times the lowland portions of the study area have been characterized by lakes and swamps whose level and extent shifted in response to somewhat random tectonic activity.

Ethnographic Settlement Patterns

The entire study area lies within the ethnographic territory of a large group of Penutian-speakers called the "Costanoan" by ethnographers. Descendents of the group call themselves Ohlone, though this may have originally been the name of a single tribelet. Merriam (1967) provides notes on the group, including people of the San Juan area, and Broadbent (1972) describes the nearby Rumsen of Monterey Bay. The Ohlone were hunters and gatherers and apparently maintained a rather

MAP 6

"PLEISTOCENE LAKE
SAN BENITO"

(AFTER JENKINS, 1973)

0 5 M

N

400' ELEVATION

PLEISTOCENE
PAJARO RIVER

C - 1 0 2 4 6 9

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dense population throughout much of the area; there is little ethnographic documentation of their settlement pattern.

Eighteenth Century explorers record several villages in the study area and comment to some extent on seasonality. Fages, in November of 1770, records a village of 50 persons (apparently our San Felipe-3) on San Felipe Lake and two larger villages "across the plain" to the west, possibly in the vicinity of Carnadero (Bolton 1911:149). In the same month in 1774, Palou reports a village of 300 (possibly our Gilroy-3) in a large grove of trees near Gilroy (Bolton 1926:257).

In December of 1795, Danti and Sal appear to report both extant and ruined villages in the San Juan and Hollister Valleys (Danti 1795; Sal 1795).

The Fages-Crespi expedition of March, 1772 encountered "three or four villages of heathen" around the Bolsa de San Felipe and a village of 30 houses somewhere near Gilroy (Bolton 1927; Treutlein 1972).

The Anza expedition in March 1776 records a village of 17 huts a short distance north of Pajaro Gap (Bolton 1930, 1933). On its return in April, abandoned villages are noted in the Diablo Range east of Gilroy (Bolton 1930).

Mission records provide an important basis for both ascertaining village locations and determining their size. Incoming neophytes were normally identified as to the village, area, or tribelet from which they came; relationships with other neophytes are also often recorded. Such information frequently appears in the death registers as well. Distance of a given village from the mission can be inferred from the sequence of baptisms; in general, close villages will provide converts before distant ones will. Direction of the village from the mission, or the general area in which it lies, can often be inferred from general comments in the registers; relative population size can be assumed to be reflected in the number of baptisms.

Table 1 shows baptisms by year at Mission San Juan Bautista from the villages identified in the registers, based on an inspection of the records by C. D. King. Data from other missions are included where available and pertinent. Map 7 presents the projected locations of tribelets and villages, and their inferred relative sizes, from all ethnohistorical sources. Appendix I provides the documentation upon which Table 1 and Map 7 are based.

Generalizing from Map 7, we find the total project area divided among at least six to seven tribelets, six of whom hold portions of the southern Santa Clara Valley itself. Most of the Watsonville subarea is Calenderruc territory, with a large village at Watsonville. The San Juan Valley and the adjacent hills belonged to the Motssum, but the data suggest that the main village was over the Gabilans from San Juan Bautista in the Elkhorn Slough drainage. The Pagsin, southeast of Motssum, seem to have had a rather dispersed settlement pattern, though

	Motsum 2.0	Ausaima 5.0	Unijaima 4.0	Guachurron-de la Playa 1.0	Guachurron-Pagsines-de la Sierra 1.0	Pagsim 10.0	Calendarrac 3.0	Tamarron 6.0	Orestaco 7.0	Millanistaco 8.0	Ochentacos 9.0	Guachurron - Soledad Baptisms Baptisms begin 1791 (San Carlos - 1787-1806 (54?))
1797	46	19	13	1		2	-	-	-	-	-	
1798	57	33	4		3	27	2	6	4	2	-	
1799	20	15	5	1		7	2	1	-	-	-	2
1800	60	98	17	4	3	64*	10	10	-	-	-	1
1801	2	24	20	3	6	3	85	2	5	-	-	
1802	1	17	27	22	6	52	20	41	27	3	-	2
1803	1	29	5	2	1	64	5	2	1	1	-	25
1804	1	26	23	17	4	53	16	14	7	2	-	15
1805	1	5	3	11	16	20	7	22	30	15	13	1
1806	-	2	-	-	5	2	6	6	-	-	-	
1807	-	-	2	-	8	-	-	-	50	1	8	
1808	-	-	1	-	-	-	-	-	-	-	-	
1809	-	-	-	-	-	-	-	-	-	-	-	
1810	-	-	-	-	-	-	-	-	1	-	-	
1811	-	1	-	-	-	-	-	-	-	-	-	
1813	-	-	-	-	-	-	-	-	1	-	-	
Total	189	259	120	59	52	294	153	104	125	24	21	

27
houses

20
houses

San Carlos (54)

Soledad (46)

Total = 224

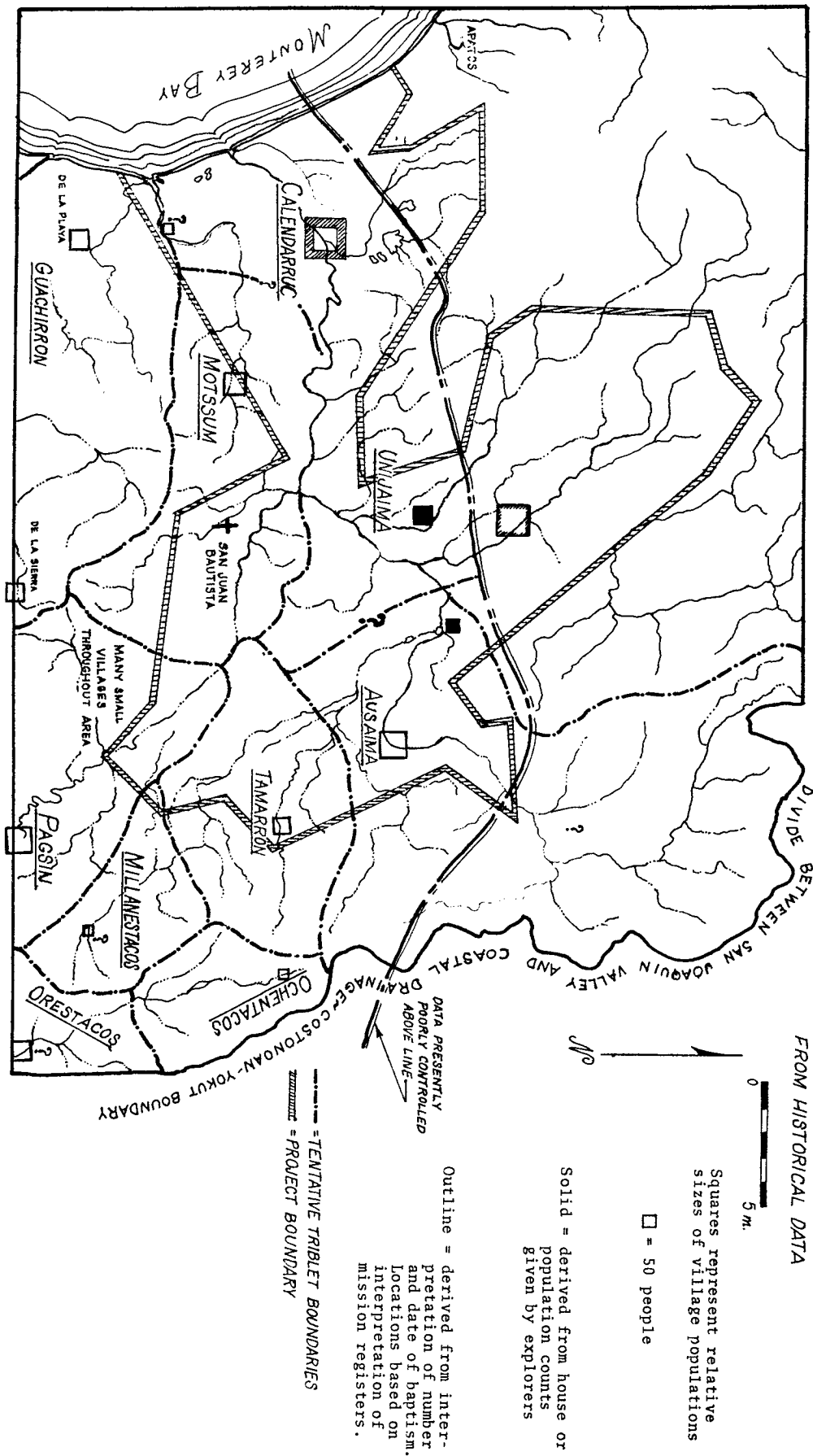
San Carlos
Santa Cruz

* - Most relatively small rancherias

TABLE 1
BAPTISMS BY YEAR AT MISSION SAN JUAN BAUTISTA
FOR STUDY AREA TRIBELETS

MAP 7

TRIBLET BOUNDARIES
AND POPULATIONS
FROM HISTORICAL DATA



there may have been a good-sized village near present Paicines. The Unijaima tribelet held the Pajaro Gap area; how far north their territory extended is uncertain, since San Juan Bautista baptisms drop off in frequency above the Pajaro in favor of Santa Clara and Santa Cruz, whose records were not inspected. The upper Bolsa and Pacheco Creek were held by the Ausaima, with a large village somewhere along the creek. The Tamarron tribelet, who occupied the lower Bolsa and the adjacent mountainous Three Sisters area, seem to have had a much smaller population, as did the Millanestacos tribelet, which may have held a portion of Santa Ana Valley. In general, populations appear to decrease in size and increase in dispersion as one proceeds from the coast inland and from the valleys into the mountains.

Distribution of Prehistoric Sites

Map 8 shows the tracts subjected to field investigation for predictive purposes. Each is a segment of a drainage, selected according to the procedure outlined in Chapter II. Table 2 presents the approximate acreage inspected by quadrangle. In addition, all project rights-of-way shown on Map 2 were inspected in detail. Spot-checks were also made in locations where villages were reported historically and where artifact finds were reported by informants. All sites recorded by all three operations are used in the analysis to follow.

TABLE 2
ACREAGE INSPECTED FOR PREDICTIVE PURPOSES

USGS QUADRANGLE	ACRES INSPECTED	SUBAREA TOTAL
SOUTH SANTA CLARA SUBAREA		
Chittenden	450	
Gilroy	2700	
Gilroy Hot Springs	150	
Morgan Hill	600	
Mount Madonna	500	
Mount Sizer	0	4400
HOLLISTER SUBAREA		
Chittenden	600	
Hollister	2300	
San Felipe	800	
San Juan Bautista	1000	
Three Sisters	800	
Tree Pinos	1900	7400

In addition to the acreage given above, approximately 80 linear miles of actual project right-of-way was inspected in the two subareas.

"Inspected" means visual observation of the land surface plus any available subsurface exposures by a small team, usually spread out with about 50' between individuals but with distance variable dependent on terrain and vegetation.

Man-days expended on above operations: approximately 200

A significant difficulty was presented by the low surface visibility of many local archaeological sites. Many sites were represented on the surface by only a few flakes or fire-cracked rocks, and in several cases we were unable to locate any surface material at all in places where significant artifact and burial finds had been reliably reported to us. We were prepared to conduct phosphorous and pH tests to define midden boundaries, but we were seldom presented with a situation in which chemical tests were appropriate. When site boundaries were not defined by natural features (streams, springs, cliffs, etc.), they were usually lost in acres of plowed fields - often treated with phosphate and sprayed with insecticide. The latter practice imposed an additional limitation on observation: detailed inspection of a field treated with Parthion is obviously to be avoided.

Low surface visibility of archaeological sites is characteristic of the general area. Correspondence with local archaeologists (See Appendix II) confirmed that significant prehistoric sites are very commonly invisible on the surface. The case is further illustrated by site San Felipe-2, a historic site on the edge of the Flint Hills, where blacksmith's tools certainly not over 150 years old were buried under a meter of stratified alluvium and only fortuitously exposed in a stream cut. Mr. George Woodard of the American Indian Council of Santa Clara County expressed special concern about such sites, arguing that a major deficiency in present archaeological surveys in environmental impact studies is that they focus on sites that are visible to surface inspection (Woodard personal communication 1973). For this reason we are suggesting extensive subsurface sampling along the San Felipe Project right-of-way (Part II: King 1973), and inclusion of subsurface reconnaissance in local environmental impact reports (see Chapter VI).

Full data on prehistoric sites recorded during the San Felipe Archaeological Study are on file with the Archaeological Survey, West Valley College, Saratoga, as well as at the A. E. Treganza Anthropology Museum, California State University, San Francisco. Specific sites are not mapped or described in detail in this report for two reasons:

- 1) Public exposure of archaeological site locations may lead to their damage by vandals and artifact collectors.
- 2) Planning agencies are often tempted to use maps of archaeological resources as if they were the final word on the distribution of such resources in the planning area. We wish to state explicitly that we have surveyed only about 25% of the Hollister and South Santa Clara Subareas, and that this survey has not included subsurface testing except in selected locations along the project right-of-way. While we feel that our sample is adequate for the predictions that follow, we wish to avoid any intimation that the sites we have located are all that exist to be found.

Pertinent descriptive data on all recorded sites are presented in Table 3. Each site has been given a temporary project designation, and

MAP 8

SAMPLE SURVEY TRACTS

0 5 M

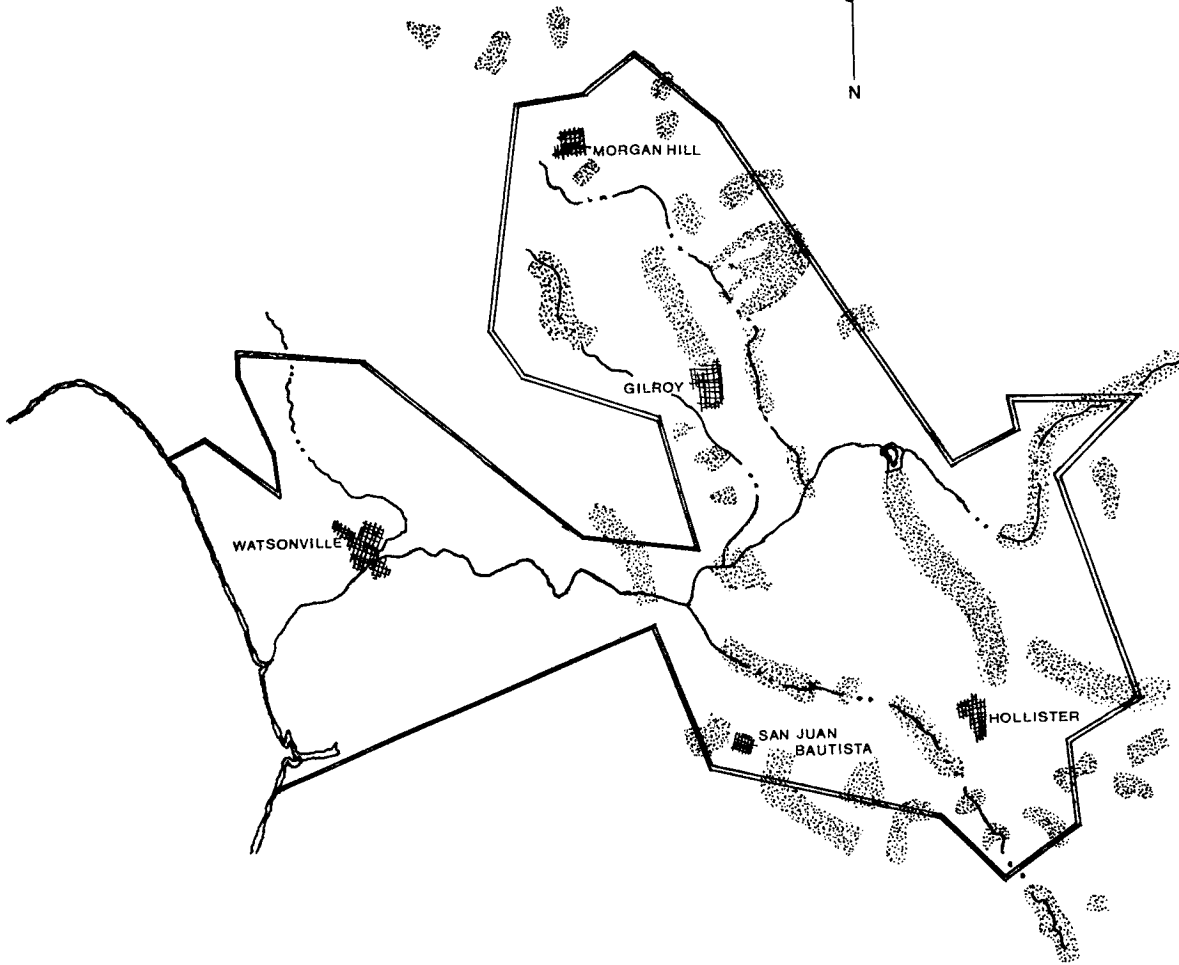


TABLE 3
PREHISTORIC SITE DESCRIPTIONS

Project Desig.	Name	Elevation	Slope	Rng. to Water	Type Water	Size Site	Midden?	Grinding Tools?	Cores or Flakes?	Fire-cracked Rocks?	Burials?	Type Site	Environment Class
Ch-2	Gap	120'	0	5M	Riv	400x400M?	0	X	X	0	X?	LOS	MM
Ch-3	-	160'	0	50M	Riv	10x30M	0	X	X	X	0	SOS	RB
Ch-4	-	160'	0	1/4Mi	Cr	-	0	0	0	0	X	SOS?	MM
Ch-5	-	180'	15°	200M	Cr	150x7M	0	0	X	0	0	SUS	MM
Gil-1	-	320'	5°	1/4Mi	Cr	50x50M	X	X	X	X	0	SOS	CM
Gil-2	-	200'	0-5°	0	Cr	?	?	X	X	X	0	SOS	AP
Gil-3	Leavesley	200'	0	0	Cr	Indet. but large	0	X	X	X	0	LOS	MM
Gil-4	-	550'	5-10°	100M	Spr	?	0	0	X	0	0	SUS	UC
Gil-5	-	440'	45°	100M	Spr	Possible petroglyph						SUS	0
Gil-6	Bear	500'	20°	0	Spr	50x100M	X	X	X	X	0	SOS	UC
Gil-7	-	560'	0	20M	Spr	30x35M	0	X	X	0	0	SOS	UC
GHS-1	Roop	360'	25°	0	Spr	?	X	X	X	0	0	SUS	UC
Holl-4	Balz	758'	5°	30M	Spr/Cr	75x200M	X	X	X	X	0	LOS	UC
Holl-5	-	220'	0	1/2Mi	Riv	30x40M	X	X	X	X	0	SOS	MM
Holl-6	-	700'	0-10°	30M	Cr	20x30M	X	X	X	X	0	SOS	UC
MI-1	-	340'	0-5°	80M	Cr	50x50M	0	0	X	0	0	SUS	CM
MI-2	Braid	310'	0	20M	Spr	100x200M	X	X	X	X	0	LOS	CM
MM-1	Uvas	280'	5-10°	20M	Cr	100x200M	X	X	X	X	X	LOS	CM
MM-2	-	300'	5°	200M	Cr	20x30M	X	X	0	X	0	SUS	CM
MM-3	-	295'	5°	300M	Cr	100x180M	X	0	X	0	0	SUS	CM
MM-4	-	280'	Dist.	5M	Cr	Dist.	X	X	X	X	X	LOS	CM
MM-5	-	400'	20°	60M	Cr	20x20M	0	0	X	X	0	SUS	UC
MM-6	-	360'	2°	20M	Cr	80Mx1/4Mi	0?	X	X	X	0	LOS	UC
Pa-1	-	370'	25°	100M	Cr	-	0	X	0	0	0	SUS	UC
Pa-2	-	360'	0	30M	Cr	45x60M	X	X	X	X	0	SOS	CM
Pa-3	O'Connell	450'	0	0	Cr	75x150M	X	X	X	X	0	LOS	CM
Pa-4	-	280'	0	0	Cr	30x60M	X	0	X	X	0	SOS	CM
Pa-5	Elephant Head	320'	0	0	Cr	Indet.	X	X	X	X	X	LOS	UC
SBn-2	-	320'	0	0	Riv	-	X	0	X	X	0	SOS?	RB
SBn-3	-	180'	10-15°	0	Riv	Indet.	X	0	X	X	0	SOS	RB
SF-1	-	250'	10°	100M	Spr	-	0	X	X	0	0	SOS	MM
SF-3	San Felipe	180'	0	4M	Lk	40x50M	X	X	X	X	0	SOS	MM
SF-4	-	220'	10°	1/2Mi	Lk	-	0	X	0	0	0	SUS	0
SF-5	Pacheco	240'	0	50M	Cr	100x275M	X	X	X	X	X	LOS	CM
SF-6	Nettle Camp	300'	0	0	Cr	Indet.	X	X	X	X	0	SOS?	UC
SJB-1	Isaacson	450'	0	0	Cr	Indet.	0	X	X	X	0	SOS	UC
SJB-3	Penn	200-250'	5°	0	Cr	1x1Mi	X	X	X	X	X	LOS	CM
TS-1	-	670'	5-10°	0	Spr	50x50M	0	X	0	0	0	SUS	UC
TS-2	Hawkins	480'	0	0	Cr	200x200M	0	X	X	X	X	LOS	UC
TS-3	-	620'	20°	15M	Cr	10x20M	0	X	X	0	0	SUS	UC
TS-4	Dos Picachos	500'	0	0	Cr	200x400M	X	X	X	X	0	LOS	CM
TS-5	-	700'	40°	10M	Cr	20x40M	0	0	X	0	0	SUS	UC
TS-6	-	380'	0-5°	0	Cr/Msh	20x40M+	X	X	X	X	0	SOS	AP
TS-7	Robba	260'	0	0	Spr	175x300M	X	X	X	X	X	LOS	MM
TS-8	-	280'	0-20°	1/8Mi	Cr	Indet.	X	0	0	0	0	SUS?	AP
TS-9	Wild Pig	220'	0-5°	0	Cr	100x130M+	X	X	X	X	X	LOS	CM
TP-1	Sperber	590'	0-5°	0	Cr/Msh	300x300M	X	X	X	X	0	LOS	MM
TP-2	-	2250'	0-5°	200M	Spr	20x50M	0	X	X	X	0	SOS	UC
TP-3	Rain Rock	860'	45°	2M	Cr	Isolated Petroglyph						SUS	UC
TP-4	Indian Hill	770'	0-9°	0	Cr	500x500M	X	X	X	X	0	LOS	CM
TP-5	-	490'	5-25°	20M	Cr	30x60M	0	X	X	X	0	SOS	RB
TP-6	Santa Ana	550'	0	0	Spr	Indet.	X	X	X	X	0	SOS	MM

names have been applied to some sites. Each site is described in terms of its elevation, local topographic slope, range to water (coded as spring - sp, creek - cr, river - riv, lake - lk, or march - msh), and overall size. All size designations should be regarded as tentative; where size is not given, it is because the surface was obscured by alluviation, agriculture, or structures. The presence or absence of definitive and recurrent features and artifacts - middens, grinding tools, cores and flakes, fire-cracked rocks, and burials - is presented for each site. On the basis of the data presented, we can place each site into one of the following categories:

Large Occupation Sites (LOS) are extensive sites containing evidence - directly observed or reported - of diverse activities, typically including cooking (expressed by fire-cracked rocks), seed-processing (expressed by mortars, pestles, metates or manos), flaking (expressed by flakes and cores) and/or interment (expressed by burials).

Small Occupation Sites (SOS) are like the above but smaller in area and do not contain reported or observed burials.

Special Use Sites (SUS) are those that appear to have had a single major function, such as seed processing (bedrock mortar site) or flaking (flake scatter).

The environmental circumstances under which prehistoric sites occur in the study area can conveniently be broken down into five broad classes:

Upper Canyon: Benches, terraces, and ridges along canyons above their mouths.

Canyon Mouth: The spot at which the canyon opens onto the valley.

Riverbank: Terraces along the San Benito and Pajaro Rivers.

Alluvial Plain: The open plain, away from all major topographic features.

Marsh Margin: The reconstructed boundary of the pre-agricultural marsh, especially levees extending along stream channels into the marsh.

When the three general site-types are tabulated against the five general environmental classes, Table 4 is achieved.

TABLE 4
SITE TYPES AND ENVIRONMENTS

ENVIRONMENT:	Upper Canyon	Canyon Mouth	River Bank	Alluvial Plain	Marsh Margin	Other
<u>SITE TYPE</u>						
Large Occu- pation Site	4	9	0	1	3	0
Small Occu- pation Site	6	3	3	3	5	0
Special Use Site	8	3	0	1	1	2

Table 4 shows that large occupation sites tend to be found in the mouths of canyons and to a lesser extent on the marsh margins and in the upper canyons. The three large occupation sites in upper canyons all occur in unusually broad, open canyon systems, and the one such site lying on the alluvial plain is on what may be a terrace of an extinct lake, at a major spring. Large occupation sites may be permanent or near-permanent centers for large populations; canyon mouths and the special other locations noted would usually provide access to both fresh water and varied natural food resources.

Small occupation sites are highly variable in their location, occurring rarely at canyon mouths and most frequently on marsh margins, but also occurring regularly on riverbanks, in the upper canyons, and on the alluvial plain. In the latter environment they are typically adjacent to creeks. Small occupation sites are probably temporary camps used during the harvest of seasonally available resources such as acorns in the upper canyons and waterfowl on the marsh margins.

Special use sites occur predominantly in the upper canyons; typical upper canyon special-use sites are milling stations and flake scatters, the former associated with seed processing, the latter probably with hunting. Of the three such sites found in canyon mouths, two lie very close to a complex of large occupation sites and may represent the loci of specific activities associated with large-village life; the third is an isolated flake scatter. The one special use site on a marsh margin is a flake scatter that could be part of a larger site now buried under the freeway near Pajaro Gap. The two sites occurring in "other" environments are a questionable petroglyph site on a steep, barren hillside and an isolated pestle in the saddle above San Felipe-3.

These generalizations provide a basis for the construction of a general archaeological sensitivity map (Map 15), and for beginning to consider the research potential of the region (See Chapter V).

Nominations to the National Register (See Map 9)

The Advisory Council on Historic Preservation has defined as qualifying for the National Register of Historic Places any districts, sites, buildings, structures, and objects of state and local significance that possess "integrity" and

"(t)hat have yielded, or may be likely to yield, information important in prehistory or history." (NACHP 1972:1:A:5:d)

According to this criterion, virtually all the prehistoric sites recorded during the study would qualify for the Register. It does not seem wise to us, however, to place all the controls provided by the Historic Sites Preservation Act of 1966 (P.L. 89-665) on all the sites we have recorded, considering that many are in very bad condition and some cannot be fully evaluated without further research. We wish to be explicit in stating that we are not recommending that any site be "written off" when we do not nominate it to the Register, but we do feel that only a few sites and districts are currently well enough documented, and bear sufficient evident research potential, to make their inclusion on the Register unquestionably appropriate. These are:

Baird, a large occupation site northwest of Morgan Hill, with evidence of internal organizational and temporal complexity.

Bear, a possible early gathering station northeast of Gilroy.

DIST → Uvas Creek, a complex of middens and special use areas west of Gilroy.

San Felipe Lake, the best-preserved known marsh-margin site, in spite of recent damage by federal earthmoving. This site is apparently the one mentioned by Fages in 1770 (Bolton 1911) as a village of 50 persons who warned the larger villages across the plain of the Spaniards' arrival.

DIST → Ausaima, the Pacheco Creek area, with eight aboriginal sites (Pacheco, Elephant Head, Nettle Camp, Wild Pig, O'Connell, and Pacheco Peak 1, 2 and 4) and the site of the Pacheco Adobe and its outbuildings, headquarters of Rancho Ausaymas y San Felipe.

Hawkins, a large occupation site in a broad upper canyon, with evidence of considerable time-depth.

Robba, a large occupation site on what may be an old lake terrace, holding the potential for providing data on past environments.

DIST.

Dos Picachos, an intact complex of sites apparently typical of the east side of the Bolsa, including a large occupation site at the mouth of the canyon, small occupation sites and special use sites in the upper canyon.

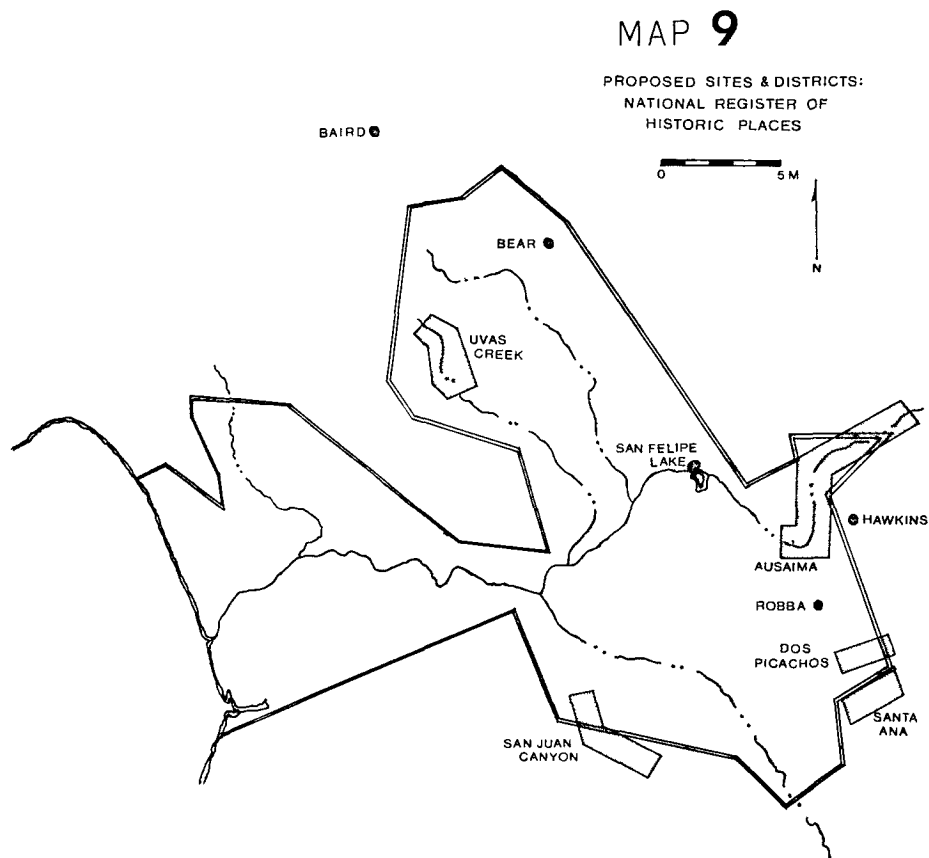
DIST.

Santa Ana, a district including the large occupation sites Sperber and Indian Hill, related small occupation and special use sites, and the site of the Santa Ana Adobe.

DIST.

San Juan Canyon, a district including the Penn Site at the mouth of the canyon, the large Balz Site in the upper canyon, three small occupation sites, the San Juan Bautista Mission vinyard and its adobe, the Angel Castro adobe, and a preserved segment of original el Camino Real.

Complete nomination forms on all sites and districts are being submitted separately. We wish to reiterate that by selecting the above sites and districts for nomination to the National Register, we do not mean to indicate that other archaeological locations in the study area would not qualify. We have not nominated other sites and districts only because data are presently insufficient to permit us to judge the condition and/or regional significance of such sites.



CHAPTER IV

HISTORIC RESOURCES

Summary

The distribution of historic sites, representing the periods 1797 - 1940, is so varied and extensive that a systematic inventory is well beyond the scope of this study. Several inventories are currently underway, most of which are primarily concerned with standing structures in relatively good condition. Archaeologists can contribute to the identification and study of such sites, but it is with less obvious locations, often representing populations that are invisible in the written record, that the archaeologist's skills are most valuable. Concentration of inventory, recording, and planning efforts on standing structures affects the perceived history of the area; the whole record of major portions of the population - those portions represented by the poor, the non-literate, and the unsuccessful in terms of the dominant society - may be lost if only impressive standing structures are attended to. In this chapter, therefore, we focus our attention on the kinds of historic resource with which archaeologists are peculiarly equipped to deal, rather than on the sorts of resource that are widely recognized as potential historic landmarks.

The history of the study area since 1797 can be conveniently broken down into four broad periods:

1. The Early Mission Period, during which land-use in the area was dominated by the economic needs of Mission San Juan Bautista.
2. The Spanish-Mexican Period, when large ranchos came into operation, mission lands were broken up, urban growth occurred in San Juan Bautista, and former mission neophytes scattered across the study area.
3. The Early American Period, when the great ranchos generally passed into American hands, the population diversified both ethnically and occupationally, and small towns and squatters' settlements appeared.
4. The Later American Period, when the railroad extended into the Valley, urban centers developed at the expense of small towns, large-scale serial changes in agricultural land-use occurred, and large numbers of migrant farm-workers, representing a variety of different national backgrounds and group aspirations, came into the region.

Each period is characterized by a distinctive distribution and kind of historic resources, although neither can be defined in detail at the present time. Further study and inclusion of representative samples of all historic site-types in future planning will be necessary if the full range and richness of the study area's history is to be preserved.

Introduction

Beginning with the entry of Spanish explorers during the last third of the 18th century, the San Felipe study area has had a rich and varied history. Mission and rancho operation, agricultural development, and the establishment and decline of towns and other population centers have left historic archaeological resources scattered widely across the area. These resources include structures, ruins, and sites at which particular activities took place, which may now be invisible on the surface of the ground.

Very few historic sites were recorded as such by the field survey teams, largely because if such sites do not include standing or ruined structures, they are often virtually impossible to recognize on the surface, while if standing structures are present, their historical significance cannot be appraised on the basis of field observation alone. The bulk of our data on historical resources is derived from documentary sources and information supplied by local authorities; specific locations were field-checked wherever possible, but the sheer number of historic resources present in the study area made systematic historic-site reconnaissance unfeasible except along the actual project rights-of-way. Our discussion of historic resources will, therefore, tend to be general in nature, first identifying works now in progress to inventory the area's vast body of historic structures and sites, and discussing the pertinence of archaeology to such activities, and then attempting a general historical synopsis that will permit the identification of classes of historic sites for future research and reference.

Identification of Resources: Work in Progress

A logical first step toward sensible management of historic resources is to make an inventory of just what exists in the area. This has been begun by several groups in the study area. The city of Gilroy is developing plans to make a complete inventory of historical sites in the area in conjunction with the local historical association (Gilroy 1973b). A photographic survey was made of historically important structures in Hollister (D. Flint and M. Flint, personal communication 1973). The Heritage Commission of Santa Clara County has as its goal a complete inventory of historic sites by 1974. Santa Clara County is currently being researched by county planning staff under the direction of the commission; as sites are reported, the commission will designate them for historic landmarks protection (Colson, personal communication 1973). Similar inventory activities are taking place in San Juan Bautista (Poole, personal communication 1973) by the city historical association, and another inventory is being prepared by the Historic Task Force of San Jose, which is a committee within the Junior League (Sampson, personal communication 1973).

In addition to the inventory activities, local groups are currently working on specific projects of particular interest to them. For example, the Gilroy Historical Association is currently attempting to acquire the site of John Gilroy's adobe in Old Gilroy (White, personal

communication 1973). The Gilroy Historical Museum, now housed in the Old Library, has plans for expansion. Gabilan College is moving an old church onto the campus to use as a museum (Pirene, personal communication 1973), and a new museum is being set up by the San Benito County Historical Association (Aikle, personal communication 1973).

We feel that at this point, little would be gained by listing the specific findings of these surveys even if they were all complete. When completed, the reports will presumably be provided to appropriate planning agencies and groups. In addition, the procedures for dealing with sites deemed historically important have not yet been decided upon by local authorities. Many of these sites are on private property and are often private residences. Premature publication of the locations of such sites without the consent of those involved could result in an unwarranted invasion of privacy by persons interested in viewing the sites (Sampson, personal communication 1973). Persons needing specific data on presently ongoing surveys and their results are referred to the list of key informants provided as Appendix VI hereto.

An inventory in an area as large as ours, and in which settlement patterns are very complex, is a tremendous undertaking. It is with recognition of the work already being done, and of the time and budgetary limitations of our project, that we have decided to center our discussion of historic resources on those sites which particularly need archaeological expertise for their discovery and interpretation.

The inventories now underway share several characteristics. They deal primarily with visible structures: old mansions, churches, public buildings, etc., which are still in relatively good condition; the discovery and evaluation of these sites is usually based on written materials about the individuals who used or occupied them. Archaeologists have skills and knowledge to contribute to the study and management of these kinds of structures. Papers by Fry (1969), Renk (1969), and South (1968) discuss how historical archaeologists can record data about buildings about to be destroyed, can contribute to restoration and reconstruction activities, and can infer details about the lifeways of the people who lived or worked in historic structures.

But archaeologists, by virtue of their training in prehistoric sites, can also serve to identify and interpret sites which might be invisible to others. Archaeologists are trained to locate sites which no longer exist as standing structures, and for which specific documentary evidence is not available.

Concentration on visible structures has a subtle effect on the collection of historic data. Attractive old buildings which are still standing tend to be elaborate structures which were constructed and maintained with large amounts of money. Emphasis on the study and preservation of this kind of site, i.e., those sites left by the relatively wealthy, successful members of the community, at the expense of more common, less visually impressive sites left by poorer members of the community, will result in an unrepresentative, skewed version of history. We suggest the expansion

of definition of historical value to include sites representative of all groups which have been parts of the cultural history of the southern Santa Clara Valley. We have identified subgroups within the larger cultural system which have played important roles in the socio-economic development of the project area and recommend that sites representative of all subgroups be included in plans for the management of historic resources.

The Role of Archaeology

Archaeologists are trained to gather data and make inferences about the lifeways of peoples who have left few or no written materials. The skills which they use in these situations can be applied to the study of literate societies to add to extant data and, more importantly, to provide different kinds of information than that which appears in written sources. A culture's written record of its own history is always incomplete and is subject to the interests and evaluations of those who write it. The problems and concerns of historians and anthropologists today are not the same as the problems and concerns of those who recorded the history of our project area. Quantitatively, we might have a large amount of material written about the past two hundred years, but it is not safe to assume that these sources contain all that there is to know, nor that they contain information pertinent to problems which concern scholars today. Archaeologists provide skills which result in the accumulation of a different kind of data and, by virtue of their training in anthropology, bring a theoretical perspective within which both documentary and artifactual materials can be studied.

In addition, archaeologists can use their skills to infer information about groups within a literate society who have left no written records of their own. These nonliterate, usually society's poorest and least powerful, are invisible in written accounts, but they have left their own archaeological record (Ascher and Fairbanks 1971:3). It is the archaeologist's responsibility to study this record and to thus provide information about past peoples which is not otherwise available.

Given our viewpoint of the work currently being done toward the identification and preservation of historic resources, and of the specific potential contributions of archaeology to the study of historic periods, we will concentrate our discussion of historic resources on 1) those sites which are in ruins or practically invisible to the layman, and 2) those sites left by groups largely "invisible" in the written record.

Method of Analysis

The social and economic character of the southern Santa Clara Valley has been shaped by the process of interplay between two important factors: how land has been used, and the structure of land ownership and control. This synopsis, beginning in 1797 with the founding of Mission San Juan Bautista and continuing to World War II, has as its

theme the identification and description of socio-economic groups or occupational types which were created by the interplay of these factors. Our intent is to simplify a large amount of data, and to provide a basis for a classificatory system which can then be developed into a taxonomy useful for the management of historic resources. The taxonomy is meant to be used on the whole range of historic resources in the southern Santa Clara Valley in conjunction with what is currently being done by local agencies and historical societies. This synopsis concentrates on that data not currently being addressed in detail by local groups and agencies, but the method of analysis can be applied to the entire range of historic resources in the area. The method of analysis is to break down time units according to major changes in land-use and to discuss the functioning of various subpopulations within the context of each time unit. Each of these subpopulations has left different kinds of sites, but consistent patterns of change and stability can be seen in land and resource use through time and in the relationships among subpopulations occupying various occupational niches.

During the Mission Period, land was used primarily for the subsistence activities necessary to maintain the Indian and Spanish population of the mission. Since mission secularization in the 1830s, land-use has been characterized by specialized commercial activities, and these commercial activities have taken place within a structure of large landholdings. Large quantities of cattle, sheep, wheat and other grains, orchard crops, seed, and row crops have successively replaced each other as dominant products of the valley. These products were raised on land units which generally have followed the pattern set down in the Mexican Period of large, single-family owned farms and ranches.

Commercial specialization and concentrated land ownership led to relatively low rural population densities and to correspondingly high urban population densities. Towns existed for the processing, transportation, and financial direction of the surrounding rural areas; as such, towns were located along major lines of communication or at crossroads which served outlying rural areas.

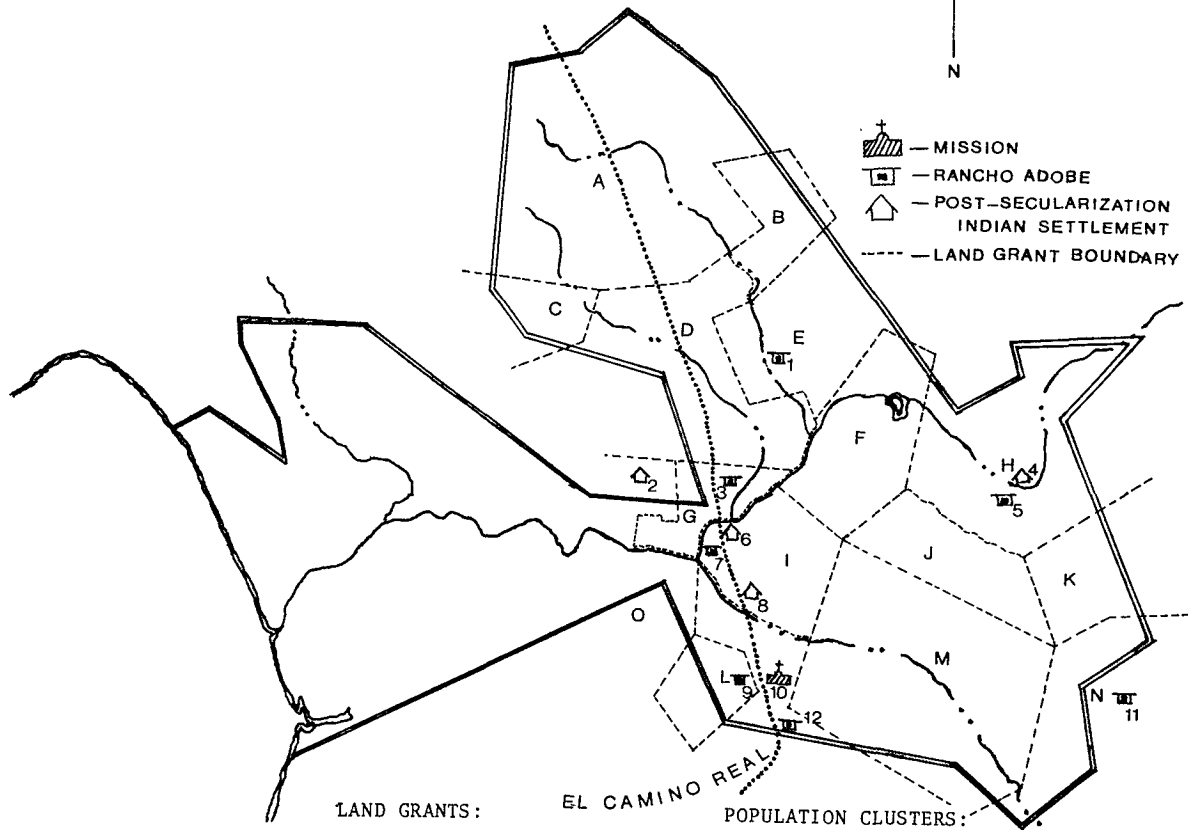
The economic pattern of the valley led to the early development of a relatively rigid social structure in which people were classified primarily by occupation. Occupation was often associated with racial and ethnic background. Concentrated land ownership resulted in a small landed aristocracy and a class of landless tenants and homeless farm laborers. Laborers worked on land owned and controlled by others, and the pattern and rhythm of their lives responded to the demands of particular products. The structure of large landholdings and of a highly differentiated social structure has continued to the present in the southern Santa Clara Valley. Agricultural labor, for the purposes of this discussion and for the use of the taxonomy which follows, will be categorized into three groups: regularly employed hired workers, tenant farmers, and migrant workers. These groups are distinctive in terms of labor performed, seasonal cycle of work, and degree of opportunity for mobility within the economic structure.

MAP 10

LAND GRANTS &
POPULATION CLUSTERS: CA. 1845



- MISSION
- RANCHO ADOBE
- POST-SECULARIZATION INDIAN SETTLEMENT
- LAND GRANT BOUNDARY



- LAND GRANTS:
- A-SAN FRANCISCO DE LAS LLAGAS
 - B-LA POLKA
 - C-SOLIS
 - D-LAS ANIMAS
 - E-SAN YSIDRO
 - F-LLANO DE TEQUISQUITE
 - G-JURISTAC
 - H-AUSAYMAS Y SAN FELIPE
 - I-LOMERIAS MUERTAS
 - J-BOLSA DE SAN FELIPE
 - K-SAN JOAQUIN
 - L-SAN ANTONIO
 - M-SAN JUSTO
 - N-SANTA ANA Y QUIEN SABE
 - O-LAS AROMITAS Y AGUA CALIENTE

- POPULATION CLUSTERS:
- 1. San Ysidro Adobe
 - 2. La Brea
 - 3. German Adobe
 - 4. Pacheco Workers Rancheria
 - 5. Pacheco Adobe
 - 6. Pescadero
 - 7. Sanchez Adobe
 - 8. Paradon
 - 9. San Antonio Adobe
 - 10. Mission San Juan Bautista
 - 11. Santa Ana Adobe
 - 12. Angel Castro Adobe

The Early Mission Period: 1797-1822

All land was owned by the King of Spain during the Early Mission Period. A few large areas were occupied by prestigious Spaniards in return for particular services to the king, Rancho Las Animas and San Ysidro being examples, but the king still held title (Arbuckle 1971:17). Other land in the northern end of our project area was designated as pueblo land and was attached to Pueblo San Jose (Arbuckle 1968; also see Broek 1932:41). Theoretically this land was to have been settled by colonists from other provinces (Bancroft 1884). Had the Spanish plan been completed, some land would have been parceled out for use as semi-subsistence agricultural units, but the plan for colonization did not take place, and a pattern of centralized secular and ecclesiastical control was firmly established.

Lands in the San Benito-Hollister subarea were used almost exclusively by Mission San Juan Bautista. At the time of secularization, in 1834, the area under mission control included 375,000 acres (Penn 1972:21) and extended east to west from the present town of Aromas to the crest of the Diablo Range. From north to south it stretched from the outskirts of Gilroy to the edge of the Salinas Plain (Penn 1972:16). Mission San Juan affected a much larger area than this, for converts were brought to the mission from the San Joaquin Valley.

The landscape was only slightly changed during the Mission Period. Rudimentary farming methods and a system of economic control imposed by the Spanish government kept agricultural production at a subsistence level. Importation of Spanish and foreign goods was strictly controlled, and the government monopolized all outlets for surplus agricultural products. There was little incentive for producing a surplus under conditions which kept prices on imports high and prices on agricultural products low (Broek 1932:39-40). Mission vineyards and orchards and the introduction of cattle and sheep changed the landscape somewhat. Peaches, pears, apples and olives were planted, and grapes from the mission vineyards were processed into wine. There were few enclosures; cattle grazed on open ranges, and the missionaries protected their crops by encircling fields with deep ditches (Mylar 1970:21). Irrigation was practiced to some extent; water was brought via canal from a spring on what is now the Isaacson property (Isaacson, personal communication 1973).

The precontact settlement pattern had been rapidly changed as Indians were induced into the mission and were kept there. Many died from venereal diseases, tuberculosis, and smallpox (Penn 1972:6). Old villages were destroyed or abandoned, and far-reaching reprisal or "convert-seeking" missions brought Indians from aboriginally distinct groups together.

Settlements in mission times consisted of population clusters of Indians and Spanish around the mission complex and a few settlements which were the centers of private ranchos (Map 10). Indians also lived in rancherias dispersed throughout the area. There were, for example, settlements along Pacheco and Carnadero Creeks where Indians lived in

log cabins and subsisted by hunting (Martin 1933:49). There is also evidence for the extension of mission buildings and small settlements into outlying areas. For example, the missionaries erected a chapel and a cemetery somewhere on the San Felipe Plain at a place called "Poy-to-Kish." This was to be used when the high waters of the San Benito River prohibited travel to Mission San Juan (Merriam 1967:391).

The Spanish-Mexican Period: 1822-1845

Ranching, or the grazing of livestock for sale in commercial markets, was the dominant form of land-use during the Mexican Period. Ranching is characterized by the control of large units of land, by the extensive use of land and labor, and by a social system in which wage laborers are dominated by a landed aristocracy (Strickon 1965: 230 and 241).

Mexican control over the southern Santa Clara Valley resulted in the secularization and conversion of mission land into large private holdings. Mexican authority in Alta California began about 1822, but it was not until ten years later that an active colonization plan was implemented and division of land was begun (Broek 1932:43). Mission and pueblo lands, in an area roughly codeterminant with the southern Santa Clara Valley, were divided into 16 tracts or ranchos between 1833 and 1845. Boundaries of ranchos were based on estimated measurements between natural features. Since the land was to be used extensively for open, or unenclosed, grazing, these indefinite boundaries caused few problems. Large quantities of hides and tallow were exported to European markets (Broek and Webb 1968:277). Meat was used locally, but no attempts were made to improve the quality of cattle as a source of beef. The economic system followed seasonal cycles in which cattle were grazed alternately on the flatlands and in the foothills (Broek 1932). Commercial ranching was supplemented by subsistence agriculture.

Land was controlled by a landed aristocracy of "California Dons", and labor was supplied by Christianized Indians and Spanish-Mexican vaqueros. These groups, owners and laborers, formed distinct sub-cultures within the larger cultural system.

Ranchos were agriculturally self-sufficient. Agricultural and household labor was supplied by Christianized Indians who lived in different kinds of settlements depending on marital status. Married Indian workers lived in shacks dispersed throughout the ranchos, and unmarried Indian adolescents and adults lived in barracks attached to the main ranch buildings (Milliken 1956:45). Large numbers of shacks for Indian families were scattered over Rancho Santa Ana (Milliken 4:770) and on the Pacheco Ranch (Milliken 4:740 and 1:204). On Rancho San Antonio shacks were built up the creek from the main building, but single Indians lived in quarters built onto the ranch house (Milliken 1956:63). These Indians were removed from their aboriginal contexts by barely a generation. Study of this sub-culture of laborers should yield valuable data concerning the process of acculturation in a

specific area and should indicate if, and how, differences in settlement patterns between married and unmarried Indians affected the acculturation process.

Labor necessary for the supervision and marketing of cattle was provided by Spanish-Mexican vaqueros, or mounted herdsmen who worked for wages (Strickon 1965:242). In the vaquero sub-culture, high value was placed on independence and on the skill and expertise necessary for the handling of wild and dangerous cattle. These values provided the internal controls necessary for the efficient operation of the ranchos which depended upon unsupervised, mobile, armed labor (Strickon 1965:242-3). Cultural materials and cultural values of the vaqueros can be traced to the medieval development of ranching in the Iberian Peninsula. In the 16th century, the ranching complex, and with it the vaquero sub-culture, were brought to Latin America where they eventually spread into Alta California (Bishko 1952:500). Study of this group of laborers should yield data concerning the adaptive strategies of a specific group within the context of a cultural pattern of great antiquity. When employed, the vaqueros lived in quarters provided by the ranchowner in or near the main buildings.

It is possible to identify types of ranchos which took on distinctive characteristics relative to their location in the southern Santa Clara Valley. Bancroft makes a useful distinction between ranchos used primarily for stock-raising, and those devoted to plantation activities (Bancroft 1888:348). The former settlements, like Rancho Santa Ana, were located in outlying areas and served as fortress-homes for the owner and his workers and as processing centers where products of the rancho were converted into consumable forms for its inhabitants. Other ranchos, like San Antonio, were located closer to town and did not need to be economically or militarily self-sufficient (Map 10). Population numbers, kinds of laborers, type of construction, furnishings, etc. would all be expected to change in accordance with changes in the functional nature of the site.

Rancho Santa Ana, located to the south of Pacheco Pass, was one of the outermost ranchos in the Hollister sub-area (see Map 10). It was the scene of several Indian attacks (Milliken 3:423). Casa Santa Ana was an immense adobe with walls three feet thick. It had high, barred windows with heavy wooden shutters on the bottom floor; the second floor was a single room with portholes for defense. The house was virtually impregnable except for its tule-thatched roof (Milliken 1956:15). Santa Ana had several outbuildings in addition to the main house, including a chapel, since it was sometimes difficult to make the trip to San Juan (Milliken 4:658).

Rancho San Antonio was a different kind of settlement. It was built within a mile of San Juan Bautista and served as a convenient town-house for its owner (Milliken 1956:113) (Map 10). The main house had two stories and forty elaborately furnished rooms. It had a patio in front and a fenced yard which sloped down to the family orchard and vinyard. A one-story addition was built along the west and north sides of the

main building to house the kitchen, dining room, and quarters for Indian servants (Milliken 1956:45). Bullfights were held in a meadow down the slope from the house.

Rancho San Ysidro began as an off-the-road cluster of ranch buildings (Map 10). It became an important stopping place for travelers because it was situated within a few miles of the main route between Monterey and San Jose (Alley-Bowen 1881:275). Buildings in San Ysidro were designed to accommodate travelers, and the small settlement of Old Gilroy, which included the first non-Spanish European settlers in our project area, grew up around the rancho center. Eventually, the town of Gilroy grew up on the main road within two miles of the old rancho (Map 11).

Remains of each kind of rancho settlement are valuable historic resources. Comparisons between different types of rancho should give information about differential adaptive strategies within the larger cultural system.

Post-secularization Indian settlements, other than those of ranchos, included groups of Indians living in, or near, the mission buildings, and larger settlements distributed throughout the valley. We are including a rather detailed discussion of the distribution of these sites because such data are not readily available; much of it comes from the unpublished primary sources in the Milliken collection of San Juan papers (Milliken volumes 1-7). Also, these sites are very important to the history of the indigenous population of the project area, and, as such, they deserve both protection and scholarly attention.

The large Indian population of Mission San Juan Bautista rapidly dispersed after secularization in 1834. By 1836 there was no sign of the once flourishing Indian community (Engelhardt 1931:123). An observer of the 1840s described only "a few post-mission Indians living in lean-to's on the east side of the wall of the church" (Milliken 4:757). When Anthony Taix came to San Juan Bautista in 1872, there were only fifteen to twenty old mission Indians left (Milliken 6:1253).

Large settlements were located at the mouth of San Juan Canyon near the cement plant (Milliken 5:1050, 4:739) and in the foothills of the Flint Ranch. Other sites were located on Pacheco Creek (Milliken 4:655), and many Indians were thought to have returned to the mountains when the missions were secularized (Milliken 5:886).

But, in general, most Indians seemed to have moved to the northern part of the San Juan Valley near Pajaro Gap. Sites were reported near Sargent's Station (Milliken 5:1050), at La Brea (Milliken 6:1191), and near the Sanchez adobe (Milliken 5:1050). A large settlement, called El Paredon, was located approximately two miles north of San Juan on a large terrace overlooking the Pajaro River (Map 10). Paredon deserves special mention because it was a heavily populated and well-documented site which was occupied for nearly a century (Milliken 5:915, 4:739).

Apparently, Paredon was established when the mission was being built and was occupied both during the mission period and after secularization (Milliken 4:739). Indians could have ceremonies at Paredon without interference from the missionaries. Large parties from the San Joaquin Valley periodically visited Paredon. Huts were made of sticks and cattle bones which were plastered with mud and thatched with tule. Corn, beans, and wheat were raised, and the Indians could get meat from the herds of roaming cattle (Milliken 4:742). The site was eventually depopulated:

"During the smallpox epidemic (of 1868) at Paredon, the Indians just dug a ditch and dumped the dead in there. The Paredon was all cleaned out by the smallpox." (Milliken 5:915)

"(after the epidemic)...high water made inroads and washed the skeletons away. The few Indians who were left wandered away and joined other tribes." (Milliken 4:742)

Field checks in 1973 failed to find evidence of the site.

Paredon was probably part of those mission lands which were made into communal, or ejido, property after secularization (Milliken 5:951-54). Missions were considered to be temporary institutions which were to have been abandoned once the Indians acquired sufficient agricultural skills to allow them to be self-supporting. The missionaries had been ordered as early as 1826 to allow those neophytes who had lived at the missions for ten years or more, and who were skilled and potentially self-supporting, to leave. These Indians and their families were to be given land for subsistence farms or were to be employed as laborers in the pueblos (Beechey 1941:10). Although some Indians left, this plan was not implemented on a large scale because of the objections of the surrounding ranchers who feared Indian acquisition of land which they coveted, and the objections of the missionaries who resented the loss of their skilled neophytes. In August, 1834, rules were published for mission secularization. Under these rules the missions were to be converted into pueblos, and the Indians were to be given what was called ejido lands.

"According to the Regimento Provisional ... each Indian head of family was to be given only eight acres, or a maximum of 32 acres. Ejidos consisting of four square leagues of land (approximately 17,500 acres) would be assigned for each pueblo as common land. The Indians were to be given one-half of the mission livestock and one-half, or less, of the mission chattels, tools, and seed. Heads of families could not sell, burden, nor convey the lands given them, nor sell their animals." (Penn 1972:11-12)

The plan was not effective in allowing Indians to gain title to their land. There are descriptions of Indians living on what was called ejido land near El Paredon, but it is clear that as late as 1846, the Indians had not gained clear title (Milliken 5:951-4).

Post-mission Indians made their livings by subsistence farming (Milliken 6:1255), as harvester (Mylar 1970:124), as permanent workers on ranchos (Milliken 4:655), and by chopping willows to sell as firewood (Milliken 6:1255). Indian women did laundry for the people in town (Mylar 1970:123, Milliken 6:1168). Diets were supplemented by hunting and by keeping fish and gathering wild fruits (Milliken 6:1253).

Some seasonal activities continued to be practiced after secularization. Groups of Indians made annual trips to the swamps near San Ysidro (Old Gilroy) to pick blackberries (Milliken 6:1281). Toyon berries continued to be collected and prepared as in precontact times (Milliken 6:1278-9). Groups of Indians made trips to the coast for clams (Milliken 4:691) or to fish (Milliken 5:886).

Other indigenous practices were continued during the Mexican Period. Estalano Larios described Indians making and using bows and arrows (Milliken 1956), and Diego Soto described Indians making trips for a special type of hazelwood which grew near Watsonville and was particularly well suited for bows (Milliken 6:1281). Indians used a temescal, or sweathouse, on Rancho San Antonio (Milliken 4:730, 1956:68).

The Early American Period: 1846-1870

The shift from Mexican to American control in California was notable in that little change was made in the pre-existing system of land tenure. A recent study shows that 78% of the land grant boundaries in our project area still serve as property lines today. Although subdivision has occurred on all the valley lands, ranchos in the hilly and mountainous areas are still relatively cohesive units (Foster 1968:85-88).

The Treaty of Guadalupe Hildalgo provided for the recognition of Mexican land grants, but land had not been surveyed, and the Mexican diseños were vague and open to dispute (Arbuckle 1971:24). Ownership rights were often tied up in litigation for many years (Frake and Solberg 1971:32), and this served to keep land units intact. Many people of Mexican descent lost their property to Americans, but the character of these Americans was that of large capitalists, not the single family homesteaders who were so prevalent in other parts of the country. Homeless settlers often squatted on disputed property and spent years making improvements. Then they were forced to move once the issue of ownership had been settled. By 1870, it was clear that what had happened in California in general, and specifically in our project area, was that a few individuals had taken control of California's agricultural and grazing lands at the time when the state was open for settlement. In 1870, 1/500 of the population of California owned one-half or more of the available agricultural lands of the state (MacWilliams 1932:23). Since there had been a large influx of people with mining and railroad activities, this pattern of land ownership resulted in a small landed aristocracy and a large class of landless tenants and homeless farm laborers. Three of the state's largest stockraising concerns were located in our project area. Figures from the Board of Equalization in 1871 show that

Flint, Bixby and Company owned 200,000 acres; the Murphys of Gilroy and Morgan Hill owned 150,000 acres; and Miller and Lux, headquartered in the Gilroy area, controlled 450,000 acres (MacWilliams 1932:20).

Despite the evident success in accumulating large acreages, large landowners had to compete with the federal government and the railroad for the monopolization of agricultural land. Alternate sections had been granted to the railroad along the right-of-way. By 1870, 200,000,000 acres of land in California were withheld from settlement by this process (MacWilliams 1932). There was much uncertainty concerning these lands. The railroad advertised that it would eventually sell parts of this land and even went so far as to fix a price and to invite settlement. Large landowners absorbed alternate sections into their wheat ranches and made improvements with the expectation that they would have first option to buy when the land was sold. The railroad evicted unlikely settlers and confiscated or raised the prices on the sections used by the large landowners. This situation is vividly described in The Octopus (Norris 1901).

An additional factor in the maintenance of large landholdings was the ability of large landowners to increase their holdings by land speculation. Land classified as "swamp" was sold at cheap rates by the state. "Swamp" was loosely defined, and many of the already rich became richer by claiming vast areas of state land. Henry Miller purportedly went so far as to have himself pulled overland in a boat mounted on a wagon so he could claim that the land he wished to buy was "swamp" (MacWilliams 1932:16).

The single family homesteads which existed in our project area were relatively few and were most persistent in areas of marginal agricultural value. Isaac Mylar's book of reminiscences gives a valuable description of homesteading life near San Juan Bautista. The Burrells were an example of a family who came from the Eastern United States in the 1850s and settled in the Santa Cruz mountains. There, following the typical pioneer pattern, they raised their own food, built their own house, and made extra money by grazing cattle for others or by selling small amounts of surplus food products (Stuart 1950:33-40). Small family establishments like that of the Burrells were able to survive because the land which they settled was of little interest to large industrialized farmers. Single family farming was also tried in the eastern foothills of the Diablos. Foothill land was not well suited for agriculture; it was easily misused and quickly exhausted by poor farming techniques. The foothills are good grazing land, however, and a few families like the Thomas's of Morgan Hill (Thomas 1971:34) became successful ranchers. Ranching settlements on government owned lands was hampered by the 1862 Homestead Act which limited holdings to 160 acres. Ranching requires much larger land units, and when the limitation was raised to 640 acres in 1916, single family farms became feasible in optimal foothill areas.

A more intensive pattern of land-use was begun in the American Period. During earlier stockraising periods, cattle were left to wander on the open range. The value of cattle and sheep increased as new markets were opened to serve California's growing population. Demands for high-quality beef led to experimentation with different breeds of cattle. Enclosures

made controlled pasturing possible. Shelters such as barns and feeding sheds appeared (Broek 1932). The drought of 1864 practically destroyed the ranching economy; after the drought ranchers turned from ranching to "stock farming" (Strickon 1965:231) which allowed them to have more control over their investment.

The shift to more intensive land-use included the development of dairies. In the Gilroy area, several dairies were begun as early as the 1850s. Gilroy became an important cheese-making center during this period and maintained a reputation for fine cheeses until the depression of the 1930s (Dispatch 1970). The development of dairies followed the existant pattern of large landholdings. Tenants leased land from landowners and provided their own equipment and labor, or large farms were divided into sections to be used for dairying, and the landowner would provide facilities for his workers (Broek 1932:63). Henry Miller's Bloomfield Ranch became a progressive, model dairy; the Bloomfield Ranch is one of the historic places of interest to local historical groups (Santa Clara County 1962).

Lumber was needed for construction during this period. In 1850 a sawmill was constructed on Pescadero Creek. The mill was water-powered and could only operate during the wet season (Patri 1970:273). This mill was shut down within a few years, but other mills in Bodfish Canyon, Brown's Valley, and Eureka Valley supplied lumber for building and firewood to the project area. Mills provided needed employment (Alley and Bowen 1881:272). Eventually the mills in the lower elevations were shut down; the logging settlements which had grown up around the mills became resort areas (Patri 1970:52) or were cleared for vinyards (Alley-Bowen 1881:272).

Towns grew up along major travel routes. The earliest towns, San Juan Bautista and San Ysidro (Old Gilroy), were on or near El Camino Real; during the early American Period San Juan became the busy station of seven stage lines. The town of Gilroy began to grow directly on the stage line in the 1850s (Map 11). Later towns, like San Felipe, were also associated with stage lines. San Felipe was a small outlying settlement near the foot of Pacheco Pass. It was a stage stop on the road to Los Banos. In 1870 it had a store, an hotel, and a Post Office. Later, workers from the tobacco fields lived nearby.

The town of Hollister was formed as part of the subdivision of the eastern part of the San Justo grant. One hundred acres were set aside for the town (Hawkins 1913:127). The townsite was off the main stage lines, but within a few years a spur of the railroad provided the transportation facilities necessary for Hollister to develop into a shippint center for local grains and mining products.

The railroad came to Gilroy in 1869 and to Hollister in 1870 (Map 11). Both towns became regional centers for the processing, transportation, and servicing of surrounding rural areas (Broek 1932:150). By 1870 one-half of the population of Santa Clara County was living in towns (Broek 1932). As populations rose, and as agricultural production

increased, the services provided by the towns became more specialized. In Gilroy, by 1875, the ubiquitous pattern of general store-church-saloon-hotel-school was replaced by specialized clothing stores, food stores, drug stores and artisan's shops (Broek 1932:94). The general store-school-church cluster persisted in the hinterlands, for example in Tres Pinos and Dunneville. The ruins of some of the old commercial buildings can still be seen at Dunneville, and the adjacent Aromas school, founded close to a century ago, is still in operation.

The towns of Morgan Hill and San Martin did not develop until the end of the 19th century, when the large landholdings of the original settlers and the railroad were subdivided into orchard tracts (Thomas, personal communication 1973). Morgan Hill developed out of an earlier settlement called Huntington, while San Martin grew up along the railroad at the expense of a population cluster around St. Martin's Church, in the Diablo Range foothills (Rice, personal communication 1973: Map 11).

Most of the earliest non-Spanish settlers in the study area came from the northern states west of the Alleghenies (Broek 1932:72). The dominant groups of foreign-born settlers came from Irish and German, as well as Mexican, backgrounds (Broek 1932:71). Eventually these earlier settlers were replaced by immigrants from Southern Europe who specialized in vinyards and orchard crops.

The Later American Period: 1870-1940

By 1870, wheat raising had replaced cattle ranching as the dominant pattern of land-use. During the period 1870-80, a major shift in land-use occurred which created a new social and economic system, which has dominated the history of the southern Santa Clara Valley to the present time. This was the shift from wheat and cattle to horticulture, which gradually transformed the floor of the valley into a land of orchards and row crops (Map 12). Patterns of relationships between owners and workers which had begun during the wheat period have been extended and intensified during the past century. The remainder of this chapter will deal with the kinds of agriculture practiced and with the groups of labor necessary for varied forms of agricultural production.

Seasonal farm labor has been essential to the economic development of the project area since the beginnings of specialized crops. The kind of crop has dictated the amount and kind of labor needed. In the absence of substantial mechanization, wheat farming required large amounts of labor during harvest and planting seasons, but little labor was required during the rest of the year. Horticulture required a much greater amount of labor, but the amount still varied seasonally. This has meant that growers have needed a supply of workers who would show up on demand and who would disappear when they were not needed. Different groups of people have filled this need in the southern Santa Clara Valley at various times.

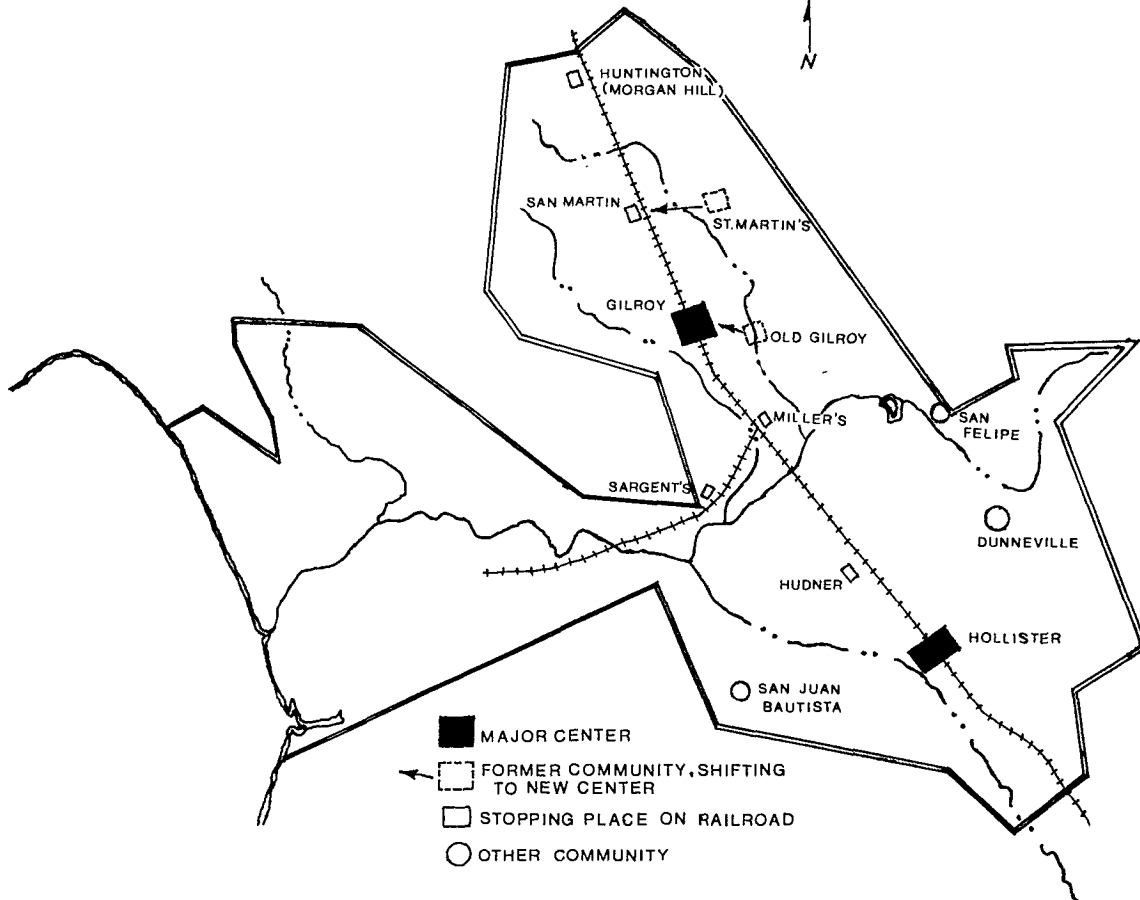
During the Early American Period (1846-70), seasonal farm labor was performed mainly by single white "blanket men" or tramps. Henry George and other visitors to California commented on the number of white migrants:

MAP 11

RAILROAD & COMMUNITIES
CA. 1875

(AFTER BROEK, 1932)

0 5 M

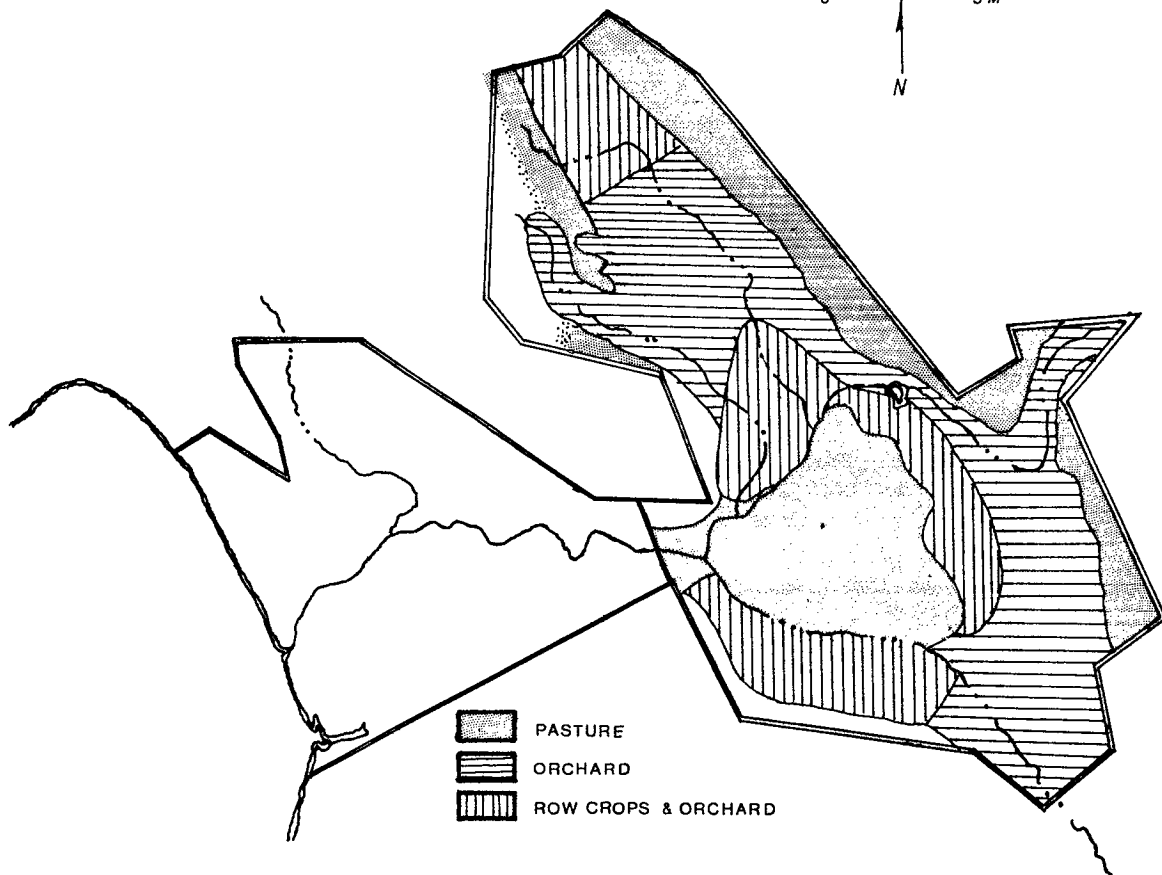


MAP 12

GENERALIZED
LAND-USE ; CA. 1931
(AFTER BROEK, 1932)

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"One of the notable phenomena of California is the multitude of its tramps, the so-called blanket men. I seldom met less than a dozen or fifteen a day... I did not see ten honest, hard-fisted farmers in my whole journey. There are plenty of city-haunting, old bachelors and libertines, who own great ranches and lease; and there are enough crammers of wheat, crammers of beans, crammers of mulberries, crammers of anything that will make their fortune in a year or two, and permit them to go live and die in 'Frisco.' (Stephen Powers, Afoot and Alone, 1872, quoted in MacWilliams 1932:26-27).

Some landowners designed policies to keep this labor supply available while at the same keeping it mobile. In our project area, Henry Miller instituted what was called the "Dirty Plate" route. Tramps were allowed to pass freely through his territory, and they were to be given one free meal which was to be eaten on the dirty plate of a hired hand. In this way Miller kept extra labor available by minimal handouts, while keeping the men mobile and "in their place."

By 1875, farmers and stockraisers were turning to more intensive use of land. The drought of 1864 led to intensive cattle raising procedures. Fences were built, forage crops were raised, and feeding sheds and other structures were built in order to more closely control production of cattle (Broek 1932:79). Hay production followed intensive stockraising practices, and this crop also called for gangs of contract labor during spring and winter peak seasons. Hollister was particularly known for its fine hay (Guinn 1910:329).

Wheat had been a highly profitable crop because of relatively cheap transportation costs, high prices, low investment, and minimal labor needs (Broek 1932:64). But by the 1870s wheatland had been depleted by continual single cropping (Broek 1932:77). In general, the bolsa and foothill lands retained their pastoral character, but changes in land-use were necessary on the valley floor (Broek 1932:80).

The shift from wheat to orchard crops would have been impossible if a large supply of potential agricultural workers had not been present. Ten thousand Chinese had been put out of work when the railroad was completed in 1869 (MacWilliams 1935), and it was the existence of this labor supply which allowed large orchardists to compete with mechanized wheat farmers. The Chinese were generally unmarried, having come to California as single men with the intention of returning to China. They were mobile, powerless, and could be made to do the meanest kind of work. Chinese settlements followed a seasonal cycle. They would appear when it was time for planting and stay until harvest was over. Then they would disappear from the fields into the Chinatowns of Gilroy and Hollister, only to reappear when needed. In addition to being convenient, Chinese were industrious and efficient workers. It is possible that they, as experienced farmers, taught their inexperienced white employers how to pack, plant, harvest and cultivate fruit (MacWilliams 1935:71-72).

At least 200-400 Chinese lived in the southern Santa Clara Valley during the 1870s and 1880s. In addition to seasonal farm labor, they cut lumber, worked as cooks in townhomes or neighboring ranches, and raised truck crops on land leased near their settlement in Gilroy (Dispatch 1970). Tobacco was raised in the Gilroy area in the 1870s, and Chinese formed the bulk of this industry's labor (Low, personal communication 1973). Chinese worked on the Ferry-Morse seed farms first in San Jose, and later in Hollister. The Chinese settlement in Gilroy, once the setting for many Chinese laundries, restaurants, and gambling houses, has been destroyed by a series of fires (Low, personal communication 1973). This area, between Monterey and Lewis, and 7th and 8th, was also a center for Filipino laborers who came in the late 1920s (Bagood, personal communication 1973).

As the numbers of acres devoted to fruit crops increased, Chinese became the dominant group in farm labor. Small farmers, organized labor, and small manufacturers were not able to exploit Chinese labor, and these groups formed a political block designed to exclude Chinese from the labor supply. The California Constitution of 1879 reflected the growing concern of Californians about Chinese monopolization of labor. Chinese were to be excluded from work on all state, county and municipal programs; corporations could not employ Chinese, and legal provisions were made for residential segregation. The Constitution was not passed in this form, but the pattern of segregation of migrant labor became an accepted norm in California. State legislation was followed by federal exclusion acts in the 1880s. By 1893, racial antagonisms, combined with frustrations fanned by economic depression, led to anti-Chinese riots in California's agricultural valleys. Most Chinese were driven from the fields into the cities. This, of course, affected production; between the time the Chinese left and the Japanese replaced them in the fields, one-half million acres of farmland in California was put out of cultivation (MacWilliams 1935).

In the 1890s some farmers began experimenting with irrigation in their orchards, berry farms, and alfalfa fields (Broek 1932:115-6). Irrigation provided more control over the quality of crops, but it also increased the amount of capital investment necessary for successful production. At the same time, more cultivation was needed in irrigated fields, and this meant dependence on increasing amounts of hand labor.

The years prior to the turn of the century saw a drop in fruit production. Orchards were cut down and abandoned as a result of overexpansion, drought, and labor disturbances. At this point it was impossible to revert to wheat, and a new crop suitable for intensive agriculture was needed. This crop was provided by sugar beets, and a new system of plantation agriculture was begun in California. The sugar beet factory came to our study area in 1889, when Claus Spreckles built a factory near Watsonville.

Plantation agriculture is characterized by large landholdings and centralized control of land, labor and machinery. Heavy capitalization

is necessary for irrigation, machinery, fertilizer, and transportation (Mintz 1952:139). Sugar beets are bulky and heavy, so sugar extraction took place in factories built in the fields (Schwartz 1945:102). 90% of the labor required in sugar beet production is intensive hand labor. Work is done under pressure during two seasons of the year. Blocking and thinning are done in the spring, and harvesting is done in the fall. This meant that labor had to be organized in such a way that large amounts would be available during two seasons of the year. Sugar beet owners met this problem by staged plantings and by the cultivation of strawberries in conjunction with sugar beets. Labor required for sugar beets and berries occurs at complementary time intervals. Concomitant cultivation of these two crops meant that agricultural employment in a given area could be extended over a longer time period, and that growers could be assured of labor necessary during their peak seasons. Workers lived in more permanent settlements than those of most seasonal workers and were supplied by company stores near the fields.

Work in sugar beet fields is difficult and relatively undesirable. The exclusion of Chinese workers left a need for a new supply of workers who were willing to do back-breaking labor for low wages. This need was filled first by Japanese, and then by Filipinos, who were invited to California by the growers.

There were less than 100 Japanese in California in 1880. By 1910 there were over 70,000 Japanese in the state, and 30,000 of these were agricultural workers (MacWilliams 1935). They were experienced farmers and most of them came as single men hoping to eventually return to Japan and invest their savings there (Kunimura, personal communication 1973). Their migration through the state was well organized and efficient. Clubs were organized and run by a secretary who contracted with growers. These secretaries communicated with each other, and a network was created which could supply Japanese labor on demand to farms all over the state (Schwartz 1945:56). Growers were not expected to provide transportation or housing, so the Japanese laborers lived in whatever shelter was available or in shacks which they built themselves (Kunimura, personal communication 1973). During the winter, when jobs in agriculture were few, the Japanese returned to the location of their home clubs and picked up whatever jobs they could in residential areas (Schwartz 1945:56).

The industry, efficiency, and organization of the Japanese made them successful workers, and they came to dominate farm labor in many crops. By 1907 they were the highest paid agricultural workers in the state. Their pivotal place in California agriculture is shown by the following list, which gives the percentages of Japanese labor in various crops:

- 80% celery
- 90% berry
- 70% asparagus
- 65% cantaloupe
- 90% garden
- 70% deciduous fruit
- 85% lettuce
- 95% sugar beets (MacWilliams 1935:112)

Many Japanese were successful in acquiring farmlands before 1913. Their success brought about a reaction from other farmers. Japanese were made ineligible for citizenship by the Asiatic Exclusion Act, and the Alien Land Act of 1913 made it illegal for persons who were not citizens to own land (Dispatch 1970). Large landowners opposed Japanese land ownership because it cut down on their labor supply and threatened the continued existence of large land units. Small farmers supported the Alien Land Act because Japanese had, by intensive cultivation, pushed up land values. The Alien Land Act was circumvented by Japanese families by the process of deeding land to their children who were American citizens by birth. The number of Japanese farms in California increased from 1,816 to 5,112 from 1910-1920. Japanese labor was withdrawn from white growers since Japanese hired other Japanese almost exclusively (Schwartz 1945:55).

Japanese began arriving in the Gilroy area in 1902 (Dispatch 1970). They relied on other Japanese to rent land, obtain seed, and to find jobs. The language barrier was significant in identifying Japanese as a visible, separate, competing economic group, and this exclusivity was maintained by Japanese language schools. Japanese were employed mainly on strawberry, tomato, and seed farms, and they were the first to raise garlic on a large scale in the area (Dispatch 1970). Many Japanese settled in the swampy land south of Gilroy which they made into a profitable row crop area by extensive draining and clearing.

Several Japanese were very successful in the southern Santa Clara Valley. Prior to World War II, Mr. Hirasaki farmed over 1500 acres and was one of the largest garlic producers in the state (Dispatch 1970). There were several Japanese businesses, and two or three stores in Gilroy catered to the Japanese community (Kunimura, personal communication 1973).

70-80 Japanese families lived in the Gilroy area before World War II, and a smaller number lived in Hollister where they worked for the Ferry-Morse seed farm (Kunimura, personal communication 1973).

In May, 1941, the Japanese were moved to the Salinas Assembly Center and were then relocated for the duration of the war to the Poston camps in the Mohave Desert. After the war many Japanese returned. Only a few had been able to hold their property; most were required to start again on second-grade land (Kunimura, personal communication 1973). Now Japanese own and lease extensive areas in the project area. Most of the large seed farms in the Gilroy area are Japanese-run. Japanese landholdings are large, as are the landholdings of other groups, because of the large amount of capital required for investment and maintenance of industrialized farms (Kunimura, personal communication 1973).

From 1910-1920, the dominant group in seasonal labor in California were white migrants (Schwartz 1945:56). Japanese immigration had been cut short by the Gentlemen's Agreement of 1907, and Japanese labor was concentrated on Japanese owned property. There was some experimentation with Hindus and with immigrants from Southern Europe, but this involved minimal numbers of laborers (Stein 1973:36). However, many Italians and

Portuguese came into the area and took the places of the original Irish, German, and Mexican landowners (Broek 1932:71). Italians changed the landscape of the valley by planting orchards and vineyards wherever the land was suitable. Portuguese, from the Azores and the Canary Islands, were primarily tenant farmers and agricultural workers (Flints, personal communication 1973). Migration from Southern Europe was cut off by the Immigration Act of 1924.

From 1914-1930, large farmers employed Mexicans as their main source of labor (MacWilliams 1935:128). In 1920, 50% of the migrant labor force in California was Mexican. Mexicans were skilled agricultural workers; they knew California's agricultural crops and would work for low wages. Like other labor imported from foreign countries, they were easily exploited. They worked when needed and then disappeared from the fields into Mexican towns on the outskirts of valley towns, or in major cities. Mexican labor was also attractive to owners because they were more easily deported than other groups when they were no longer needed. Because their earnings were so low, they swelled the relief roles of the towns. During the Depression of the 1930s, the cycle of relief-harvest labor-relief became intolerable for the townspeople, and a program of "repatriation" was begun in which Mexicans were offered free transportation across the border. The unwillingness of townspeople to support Mexican workers during the off-season was again reflected in the bracero programs of later years. Over 150,000 Mexican farm workers were returned to Mexico by 1937, but, in fact, most Mexicans remained in California (Stein 1973:36-7), and today they form the largest single element in agricultural labor in the southern Santa Clara Valley.

The 1920s saw an influx of yet another group of agricultural workers. Thousands of Filipinos entered the state with the encouragement of large growers who feared that their supply of Mexican labor might be cut off by the Immigration Act of 1924. Filipinos were nationals and could enter the country without restriction. They were young, single men who came in the hope of economic advancement. They worked on seed farms and large ranches. Over the years, the Filipinos developed special skills which led to the domination of certain areas of production. They came to monopolize the lettuce harvest and asparagus cutting labor of the 1930s (Schwartz 1945:60). As migrants, they worked under the labor-contractor, or padrone, system. Many Filipinos were able to work year round in truck gardens and orchards; they got jobs repairing machinery or irrigating during the off-season (Schwartz 1945:60).

Several hundred Filipinos came to the study area in the late 1920s and 1930s. They worked on Japanese farms harvesting lettuce and onions, and in vineyards and orchards picking grapes and prunes (Bagood, personal communication 1973). They lived in tents while working in orchards, and sometimes small houses were built for them in the vineyards (Bagood, personal communication 1973). In the old Chinatown area of Gilroy there were Filipino restaurants, pool halls, and gambling houses in the 1930s.

There are few Filipinos left in the project area. Most came as single men, and earlier anti-miscegenation laws forbade intermarriage between Asians and other races. Most Filipinos are older, retired men who live on relief or social security, and many have moved to Stockton, where there is a large Filipino community (Bagood, personal communication 1973).

The coming of the Dust Bowlers in the late 1930s finally exposed to the nation how far California's agricultural system had strayed from the Jeffersonian ideal (Stein 1973:27). These migrants, or "Okies", were different from previous groups in several respects. They were white, Americans of many generations, and came as families seeking land of their own. Once they arrived, however, they found that economic opportunities lay in the tradition of industrial wage labor, rather than in the pioneer, single-family farm of the past (Lange and Schuster 1969:110). Okies were forced into migrant farm work when they arrived, but they never intended to remain in that economic role. Growers were appropriately alarmed because the Okies did not fit into the institutions which had been developed to keep agricultural labor mobile (Stein 1973:39). Okies stayed on after the harvests, and eventually squatter's camps outside of towns were converted into permanent suburban slums (Stein 1973:51). Their presence alarmed townspeople because the Okies needed health services, relief, and schools for their children, all of which were seen to be provided by local taxpayers' money.

As migrants, most Okies lived wherever they could. If they were working, they lived in quarters supplied by the growers. A small percentage could find shelter in camps provided by the federal government (Stein 1973:47). However, most Okies were unemployed most of the time, and they settled in uninhabited corners throughout California's valleys, along riverbanks, or in camps pitched along irrigation ditches in empty fields. They were periodically evicted from their camps by growers and townspeople who feared the influx of large numbers of desperately poor people who lived under unsanitary and disease-ridden conditions (Stein 1973:49).

Previous to the Okie influx, contacts between whites and farm labor had been stylized by race. Many of the same social patterns were extended to the Okies; residential segregation was accepted and expected, and Okies were stereotyped as degenerate, shiftless people who enjoyed living in squalor (Stein 1973:62-4).

The employment opportunities offered by industrial expansion during World War II drew many Okies from agricultural labor and from California valleys. Their descendants who remain are no longer seasonal workers but work as wage laborers in a variety of jobs.

The Distribution of Historic Resources

The general research design provided in Appendix III asserts that the location of settlements is determined primarily by the need to maximize energy input while minimizing energy output in subsistence activities. This assertion applies to historic settlements as well as to prehistoric

ones, but since historic populations have adapted to a much more complex and rapidly changing natural and social environment than did prehistoric groups, the distribution of historic resources is less easily predictable from the general model. In the preceding pages we have indicated in a general way how the population of the southern Santa Clara Valley diversified, grew, and distributed itself over the landscape in response to economic, technological, social and political changes in the area, the state, and the nation. A much more detailed study, well beyond the scope of the present project, would be required to systematically link these historical changes to the distribution of specific sites and site-types. We can, however, summarize some basic assumptions about historic site distribution that follow from the data just presented and that provide a basis for some of the general planning recommendations to follow.

During the Early Mission Period, historic Hispanic settlements will be found rather tightly clustered around the specific location of Mission San Juan Bautista. During this period some dislocation in the relationship between surviving Indian communities and the natural environment can be expected, as native populations adjusted to the presence of a new economic and social variable in the form of the Hispanic community. Shifts toward locations at which agriculture could be practiced and/or access to San Juan Bautista facilitated might be expected on the one hand, but shifts toward defensible or difficult-to-find locations can also be predicted. The latter type sites might be occupied particularly by Indian groups from the east and northeast, who apparently began using portions of the study area toward the end of the Mission period as local native villages became depopulated.

During the Spanish-Mexican Period, a considerable dispersal of the Hispanic and the increasing immigrant population occurred. Historic non-Indian sites of this period will be found clustered not only around San Juan Bautista but around the Rancho centers (Map 10). In general, the latter locations appear to be controlled by access to travel routes and to natural supplies of potable water, and by agricultural potential. Defense was also a consideration in site-placement for Rancho centers. Around San Juan Bautista, secular urban development took place during this period, with the establishment of town houses like San Antonio. The locations of Indian settlements during this period are not very well under control. While many ex-neophytes tended to congregate on the Ranchos, where food and shelter could be obtained in return for ranch work, others seem to have scattered rather widely across the area. The locations of secularized Indian villages like El Paradon correlate with ejido land in general, but by no means seem to be correlated with optimal access to significant natural resources or good agricultural land. In general, a correlation of independent Indian settlements of the period with low-potential land is predictable; such settlements will probably be found rather widely scattered in isolated corners of the Valley, although the data suggest a tendency to concentrate in the vicinity of Pajaro Gap. Native raiding parties from the east, who are noted as attacking outlying ranchos from time to time, presumably were utilizing the resources of the Diablo Range, but probably left only ephemeral traces.

During the Early American Period, the Indian population declined to near-zero, while a considerable diversity of new ethnic and occupational groups appeared. Numerous small towns began to be formed, generally based on the old rancho centers or controlled largely by travel routes and the distribution of land in litigation on which squatters could concentrate (Map 11). As the old rancho centers became small, diversified towns, the new owners of large land tracts tended to establish new headquarters. Thus the distribution of historic resources representative of this period will be somewhat less nucleated than those of the previous period; they include small towns and large ranch centers, most of whose locations are historically documented, and the probably ephemeral remains of squatters' settlements whose locations would be determined in large part by the distribution of more-or-less unclaimed land.

The Later American Period sees the consolidation of urban/industrial centers along the railroad, and a general decline of the smaller towns. The large ranch centers continue in existence and for the most part are still occupied and operated today. This period is one in which a succession of landless subpopulations entered the Valley. Each tends to be a homogeneous ethnic group, each is associated with slightly different economic circumstances and land-use practices in the area as a whole, and each has a somewhat particular approach to occupation and residence in the Valley. Most of the non-white subpopulations consisted of single men who had little or no intention of permanent residency; obviously this constituency, coupled with their economic position, will affect the nature of their historical residue. The Chinese were closely associated with the early development of orchards, and their settlements, other than the Chinatowns in Gilroy and Hollister, should be spatially related to areas that were in orchard during the period. Since the Chinatowns provided a relatively permanent "home base" for the Chinese population, their residence on the orchard lands probably left rather little trace.

The development of plantation agriculture is closely correlated with the advent of Japanese workers in the area. While the distribution of Japanese workers would thus covary with the distribution of plantation operations, the distribution of historical resources they left would probably be rather similar to that left by the Chinese. Again, the group was composed primarily of single men who had little intention of permanent residence. The clubs that brought them to California constituted home bases in urban centers, and residence in the fields was on a catch-as-catch-can basis. Unlike the Chinese, however, the Japanese began to modify their aspirations and become local landowners during the early part of the 20th century. Historic resources representing the development of Japanese landowning and land-use are apparently concentrated in the area south of Gilroy, where previously marginal lands were drained and brought under cultivation.

Mexican laborers worked and work in a wide variety of agricultural situations, particularly as the supply of Japanese labor began to decline. Their historic resources will be found both in migrant labor camps and the ruins of such camps in the immediate vicinity of large orchards and plantation fields, and on the outskirts of the urban centers.

Mexican workers tend to include complete families more often than did the occupational groups typified by Japanese and Chinese; thus the sites they occupied, both in the field and around the towns, are likely to be somewhat more varied and substantial.

Filipinos, on the other hand, were much like the Chinese and Japanese in that they did not enter the Valley with their families. They did, however, sometimes find permanent employment on farms and ranches, and thus did not have to participate in the country-city transhumance that characterized the Chinese, Japanese, and Mexican labor groups. Their historic resources will presumably be found on the ranches and farms, particularly in orchards, vinyards and truck farms, and closely correlated with Japanese farm ownership.

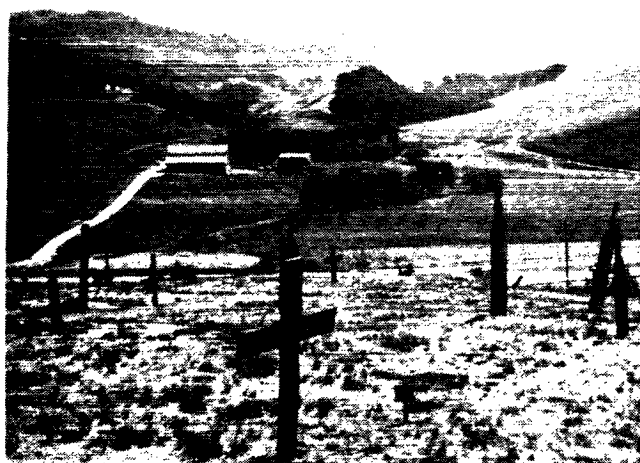
The Okie subpopulation was typified by families that came to the area expecting to establish small farms; thus their residential sites should be rather substantially different from those of other immigrants, and should show a process of change through time as the members of the group adapted to the actual land-use and employment situation in the Valley. The distribution of historic sites representing the Okie group will probably be much like that of sites representing Mexican labor: on the outskirts of urban centers and on spots provided by employers close to the fields and orchards.

With the exception of those noted in the synopsis or indicated on Maps 10 and 11, we are not prepared to locate particular sites representative of the various temporal periods and occupational groups; to do so would require considerable further study. We strongly suggest that such study be undertaken, however, as a part of or adjunct to the historic-site inventories now in progress. The inclusion of such sites in plans for preservation, study and interpretation is necessary if the multi-ethnic, multiracial heritage of the southern Santa Clara Valley is to be preserved. In later chapters we will discuss some approaches to both research and resource management pertinent to such sites.



3: SIGNIFICANCE

Above: Test excavation at
Penn Site.



Left: Historic cemetery,
San Juan Bautista

CHAPTER V

RESEARCH DESIGNS

Summary

While there are many ways to evaluate archaeological resources, the scientific value of the resources is a key factor that must be carefully considered. To define the scientific value of an archaeological resource it is necessary to consider just what pertinent questions about human behavior can reasonably be addressed using the resources in question.

In this chapter, drawing upon current anthropological theory, we discuss some general questions that might be addressed using the archaeological sites of the southern Santa Clara Valley. Using data on pre-history, we suggest addressing some basic questions about the way societies organize themselves relative to their environments. Specifically, we suggest that questions about population growth and its consequences can be addressed in the study area, though our present data do not provide much enlightenment on such matters.

Using historic data, we suggest the need for a concentrated search for archaeological ways to characterize the subpopulations that have resided in the southern Santa Clara Valley, as well as the changes that they have undergone in their relationships to one another, to members of different occupational types, and to the land and the economy. Basic questions about how such subpopulations and processes may be reflected in the archaeological record must be answered before we will be able to address cross-cultural questions of general anthropological importance using historical sites within the study area.

Introduction

While some archaeological resources may be of cultural, historic, religious, recreational, or educational value, all such resources are of scientific value. To evaluate them and to decide what sort of sample should be preserved, requires that their pertinence to scientific research questions be assessed. Without such an assessment one finds oneself preserving big, deep, impressive or attractive sites at the expense of little, shallow, dull or ugly ones, thus leaving a skewed sample for future study. Moreover, some sites must inevitably be sacrificed to progress, and when this happens salvage excavation is desirable. If such excavation is to serve a useful purpose, it must be directed at some scientific goal. Getting all the data from an archaeological site is a practical and financial impossibility; one must choose what data to seek and what to let go. Should one screen through fine-mesh screen to get tiny animal bones, or concentrate on artifacts? Should one go after burials, houses, or stratigraphy? Should one do chemical analyses on soils or study the distribution of flakes? These questions can only be answered, and an excavation efficiently carried out, if one has clearly formulated questions in advance about the site to be excavated.

In an area like the southern Santa Clara Valley, which has seen almost no archaeological research, there is something to be said for more or less theory-free probing of the resources to get an idea of their potential. Such probing, however, still tends to be inefficient unless the prober has some reasonably explicit questions in mind. It is the purpose of this chapter to provide some such questions, drawing upon current anthropological theory and upon research designs that are guiding archaeological operations in other areas.

A Research Design for Prehistory

Chester and Linda King, in a previously unpublished manuscript included here as Appendix III, have developed a general research design that serves as a guide for archaeological activities at West Valley College and some other members of the Bay Area Archaeological Cooperative. This design is based on a very general problem, which can be stated as:

"According to what principles do human social groups organize themselves in space?"

The Kings' general design requires that specific models and predictions be developed for particular areas, consistent with the overall design but asking area-specific questions about particular phenomena. It is the purpose of this section to propose such a design for the San Felipe project area. This design, in turn, will provide a scientific basis for evaluating the prehistoric sites we have found and for developing recommendations for impact-mitigation.

One of us has advanced some comments on the evolution of political complexity in prehistoric California (T. King 1972) and in the Bay Area in particular (T. King n.d.), which are consistent with the Kings' design and applicable to the San Felipe area. It is proposed that:

- 1) Nonagricultural societies will become sedentary when a) the variety and seasonal availability of natural foods within the catchment of an occupation site are sufficiently great to obviate the need to travel from place to place to obtain food, or b) social interaction systems are sufficiently developed to move large quantities of food between villages. Other things being equal, sedentary village life will develop in areas where many food resources are available in all seasons.
- 2) When a hunter-gatherer society becomes sedentary, its population increases, because sedentarism permits a relaxation of population-control systems (Birdsell 1968; Binford 1968). When the population reaches a level at which the carrying capacity of the local environment is approached, it becomes necessary for subpopulations to "bud off" and establish new communities.

- 3) The establishment of new communities in less rich and/or varied environments creates a stressful situation in which readaptation is selected for (Binford 1968). Establishment of such communities on lands adjacent to or near those of the parent community (and of one another) creates a condition of social circumscription (Carneiro 1970); under such a condition, not only is stress between the growing populations likely to result in conflicts, but such conflict is likely to result in the development of hierarchical rank systems, both because conquered groups and individuals cannot be expelled but must be integrated into the dominant society as lower classes (Carneiro 1970) and because the need to be prepared for warfare selects for highly organized social systems (Gearing 1962).
- 4) An alternative or supplement to warfare as a means of reallocating resources is the development of trade systems among populations occupying varying and complementary environments (cf. Chagnon 1970; C. King 1971; White n.d.). Such trade systems, like warfare, require considerable organization both within and between communities.
- 5) As organization increases, it becomes possible to widen the circle of interaction to take in more and more groups occupying more and more types of environments and exploiting more and more resources, including non-food resources that facilitate banking and exchange (cf. C. King n.d.; Bettinger and King 1971). The operation of the trade system makes possible the support of large sedentary populations in areas whose natural resources may be insufficiently rich, varied, or stable to support such populations by themselves.

The general thrust of this proposal is illustrated in Figure 3. It constitutes an alternative to more traditional models of cultural evolution that have stressed the basic importance of food production as a prerequisite to the development of complex political organization. When applied to the San Felipe project area, it also provides a basis for predicting how prehistoric populations may have sought to maximize their benefit from the natural and social environments, and thus how the Kings' overall research design can be operationalized.

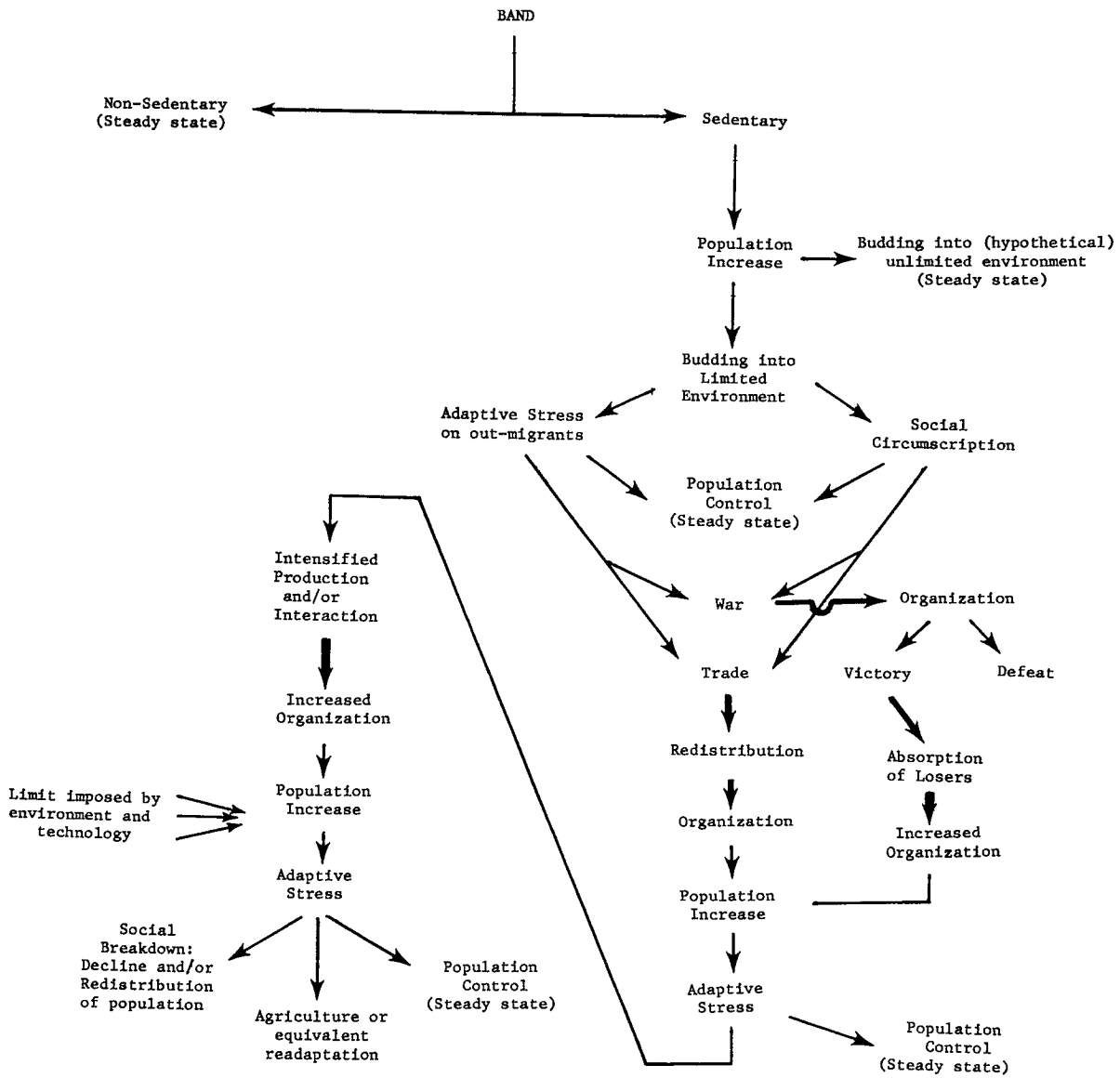
Map 13 shows the environmental diversity of catchments associated with eight sites recorded during the survey: the Bear, Uvas, Leavesley, Pacheco, Gap, Robba, Indian Hill, and Penn sites. Figure 4 shows the seasonal availability of resources in the various general plant communities. On the basis of these data, it is possible to predict the seasons during which residence would be feasible at the various sites, and to thus predict where it would be possible for permanent settlements to be established. Obviously micro-environmental diversity will affect the specific viability of the predictions, but they provide a starting point for the development of hypotheses about local culture-history.

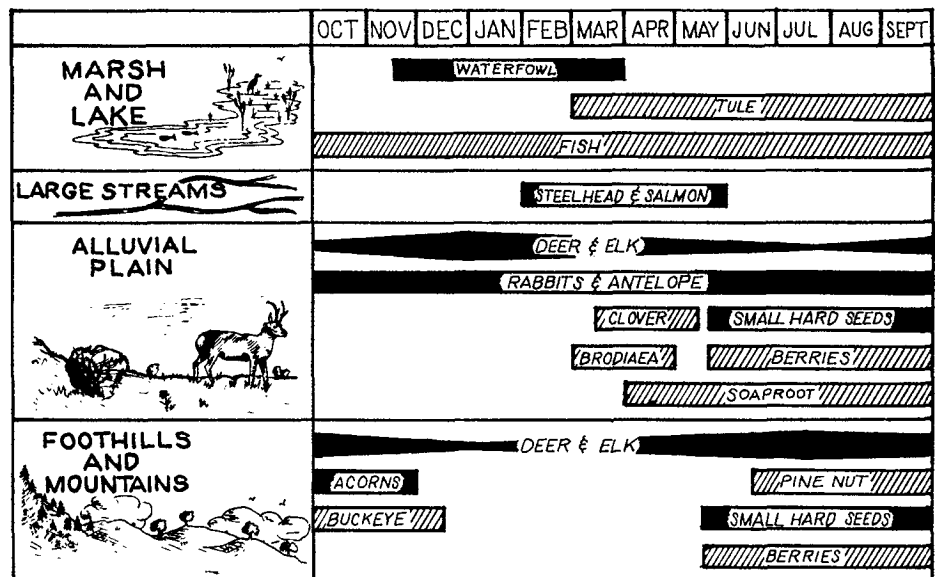
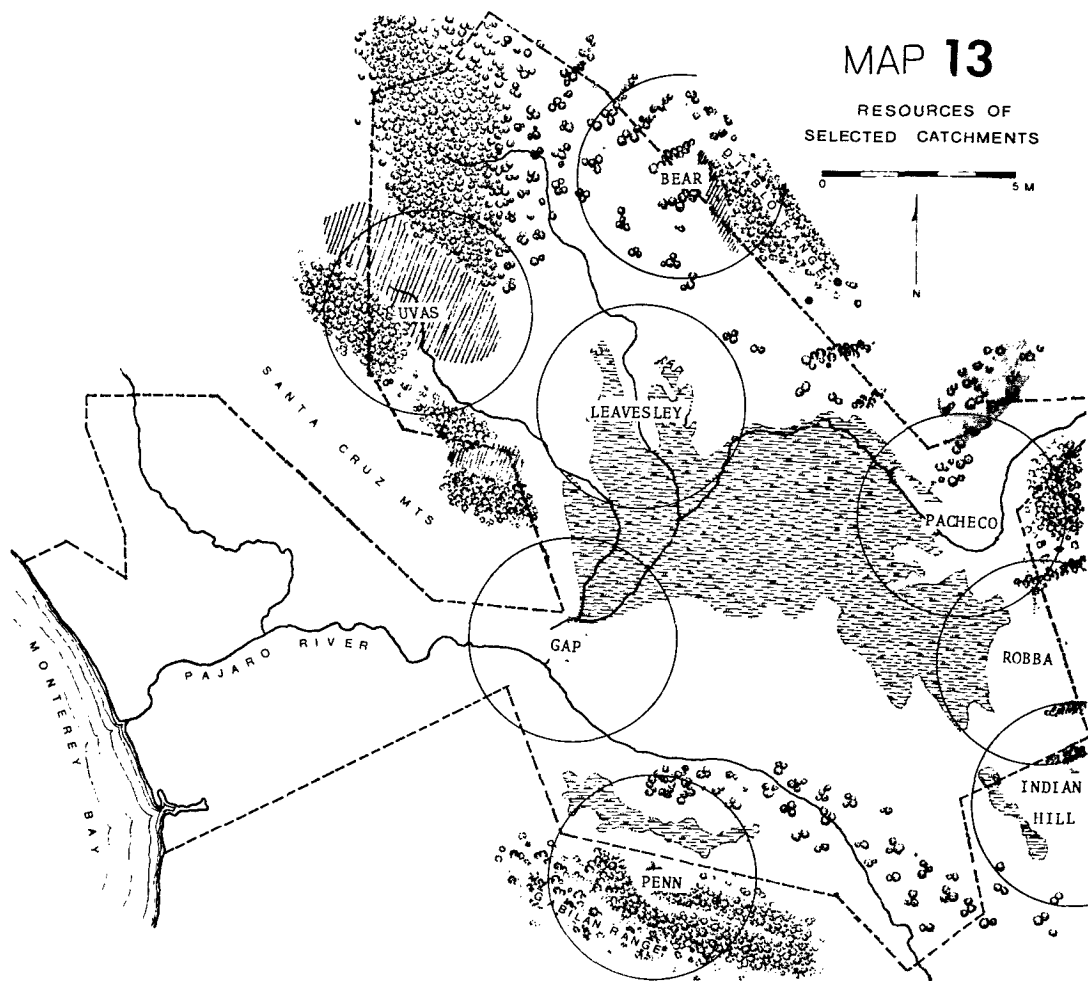
The use of acorns as a food source was characteristic of all ethnographic Central California Indian societies. The acorn, with its high

FIGURE THREE

ORGANIZATIONAL TRAJECTORIES:
HUNTER-GATHERER SOCIETIES

Thickened lines indicate
tendency toward increased
political differentiation





- PROBABLE MAJOR RESOURCE

SEASONAL RESOURCES

FIGURE FOUR

food value and storeability, was a major factor permitting the maintenance of large aboriginal populations in many parts of the state (Baumhoff 1963). Acorn processing is a complex, tedious operation, involving shelling, grinding, and a difficult leaching process to remove tannic acid. It is probable that the complex of operations required to efficiently use acorns did not become consolidated in California until the time of the "Middle Horizon;" it is at this point in the archaeological record that mortars and pestles - basic tools in acorn processing - begin to appear in large numbers. Prior to the development of the acorn technology, the plants of the chaparral and grassland communities - small hard-seed producing grasses, sages, etc. - were primary sources of vegetable food. These seed plants are typically processed using the metate and mano rather than the mortar and pestle.

Table 5 shows the seasonal viability of the eight catchments shown in Map 13 as residential loci, assuming no use of acorns. In constructing the table it is also assumed that all grasslands produced edible hard seeds and such bulb crops as brodiaea, and resources available year round, such as most land animals, are ignored. Within the limits imposed by these assumptions, it appears that sites in the Hollister subarea - Gap, Pacheco, Penn, Robba, and Indian Hill, would be habitable year round, while those of the South Santa Clara subarea - Uvas, Leavesley, and Bear - would be useable only during particular seasons.

Given the dynamics proposed above for the development and concomitants of settled village life, then, we suggest that:

- A) Pre-acorn sedentary villages should occur at sites like Gap, Penn, Pacheco, Robba, and Indian Hill. During the same period, seasonal camps might be functioning at such sites as Uvas, Leavesley and Bear.
- B) Population pressure in the Hollister subarea (or other equivalent adjacent regions) should result in budding into the South Santa Clara subarea with consequent adaptive stress.
- C) Such stress would provide the necessary precondition for the development or adoption of acorn-processing methods.

Table 6 shows the seasonal viability of the selected villages assuming use of acorns. Under this condition, Uvas becomes occupiable year round, though periodic expeditions to the marsh during the winter might be necessary. Bear and Leavesley, with their limited access to acorns, continue to look most like seasonal camps. The function of these sites might be expected to change as residence became more permanent at sites like Uvas, however; use of sites like Leavesley and Bear by specialized task groups might be expected, rather than by entire populations in the course of a seasonal round as in pre-acorn times.

The development of a new technology in order to strike a new balance between environment and population, however, is not effective as

FALL	WINTER	SPRING	SUMMER
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

Site Catchment	Deer and Elk	Waterfowl		Deer and Elk	Waterfowl	Steelhead/Salmon		Deer and Elk	Hard Seeds		Deer and Elk	Hard Seeds
<u>Uvas</u>	+	-		+	-	-		+	+		+	+
Maximum Viability:								XXXXXXXXXXXXXXXXXXXXXXX				
<u>Bear</u>	+	-		+	-	-		+	+		+	+
Maximum Viability:								XXXXXXXXXXXXXXXXXXXXXXX				
<u>Leavesley</u>	+	+		+	+	+?		-	-		-	-
Maximum Viability:								XXXXXXXXXXXXXXXXXXXXXXX				
<u>Gap</u>	+	+		+	+	+		+	+		+?	+
Maximum Viability:								XXXXXXXXXXXXXXXXXXXXXXX				
<u>Pacheco</u>	+	+		+	+	+?		+	+		+	+
Maximum Viability:								XXXXXXXXXXXXXXXXXXXXXXX				
<u>Robba</u>	+	+		+	+	-		+	+		+	+
Maximum Viability:								XXXXXXXXXXXXXXXXXXXXXXX				
<u>Indian Hill</u>	+	+		+	+	-		+	+		+	+
Maximum Viability:								XXXXXXXXXXXXXXXXXXXXXXX				
<u>Penn</u>	+	+		+	+	-		+	+		+	+
Maximum Viability:								XXXXXXXXXXXXXXXXXXXXXXX				

FALL	WINTER	SPRING	SUMMER
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

[illegible]

a means of restoring equilibrium. By permitting more population growth, the new technology - be it acorn processing or heavy industry - merely puts off the inevitable stress. We can thus predict that consolidation of the acorn economy would result in new population growth in the sedentary villages, new budding, and thus new stress. Elsewhere in California, trade systems were developed in order to transfer supplemental food supplies into areas experiencing shortage; this social adaptation permitted further maintenance and expansion of population.

We lack substantial information on the development of trade within and around the South Santa Clara Valley, but assuming that, as the Kings put it:

"The location of ... stores and the pathways ... along which energy flows can most efficiently occur often are significant in determining site locations." (Appendix III)

we can assume that the presence of a trade system would have predictable, archaeologically testable, results. Populations should begin treating the trade system itself as a resource, and start locating their settlements with some predictable relationship to the facilities of the system (trails, quarries, markets, etc.).

An alternative to trade, as noted above, is warfare. Adoption of this strategy for adaptation will have predictable results, such as situation of villages in defensible locations. War may be regarded as a more effective long-range strategy than trade; it can serve to reduce population size while trade makes maintenance of larger populations possible. A still more effective strategy might be to re-institute the population control methods associated with non-sedentary life, or to adopt a non-sedentary lifeway itself.

In any event, the development or adoption of an acorn economy in the southern Santa Clara Valley should have permitted increased sedentism and an increase in population size. The stresses resulting from this increase might have been coped with in the several ways outlined above, i.e.:

- 1) Via the development of complex trade systems.
- 2) Via increased warfare.
- 3) Via institution of deliberate population control.
- 4) Via a return to non-sedentism, with its inherent requirement for population control.

These several options have some interesting implications as they pertain to the culture-history of California Indians and to the behavior of human systems in general. Option 1) implies the development of a new organizational system equivalent to a market economy - an efficient way of organizing energy flows among social-subsystems that permits and

impels subsystem growth. This is an example of positive feedback, equivalent to the behavior of modern economics during and after the Industrial Revolution.

Option 2) suggests that the carrying capacity of the local environment could not be breached by large-scale organization, and that competition became the central means of maintaining equilibrium within the environment.

Option 3) puts the prehistoric people of the southern Santa Clara Valley in a position much like ours today - where an impending disequilibrium with the environment is recognized and a self-conscious attempt is made to restore balance, presumably without sacrificing the advantages accruing from sedentism and complex organization.

Option 4) implies that political organization has broken down in the face of environmental disequilibrium, in keeping with the predictions advanced for our own society by some systems forecasters today (cf. Forrester 1971; Meadows and Meadows 1972).

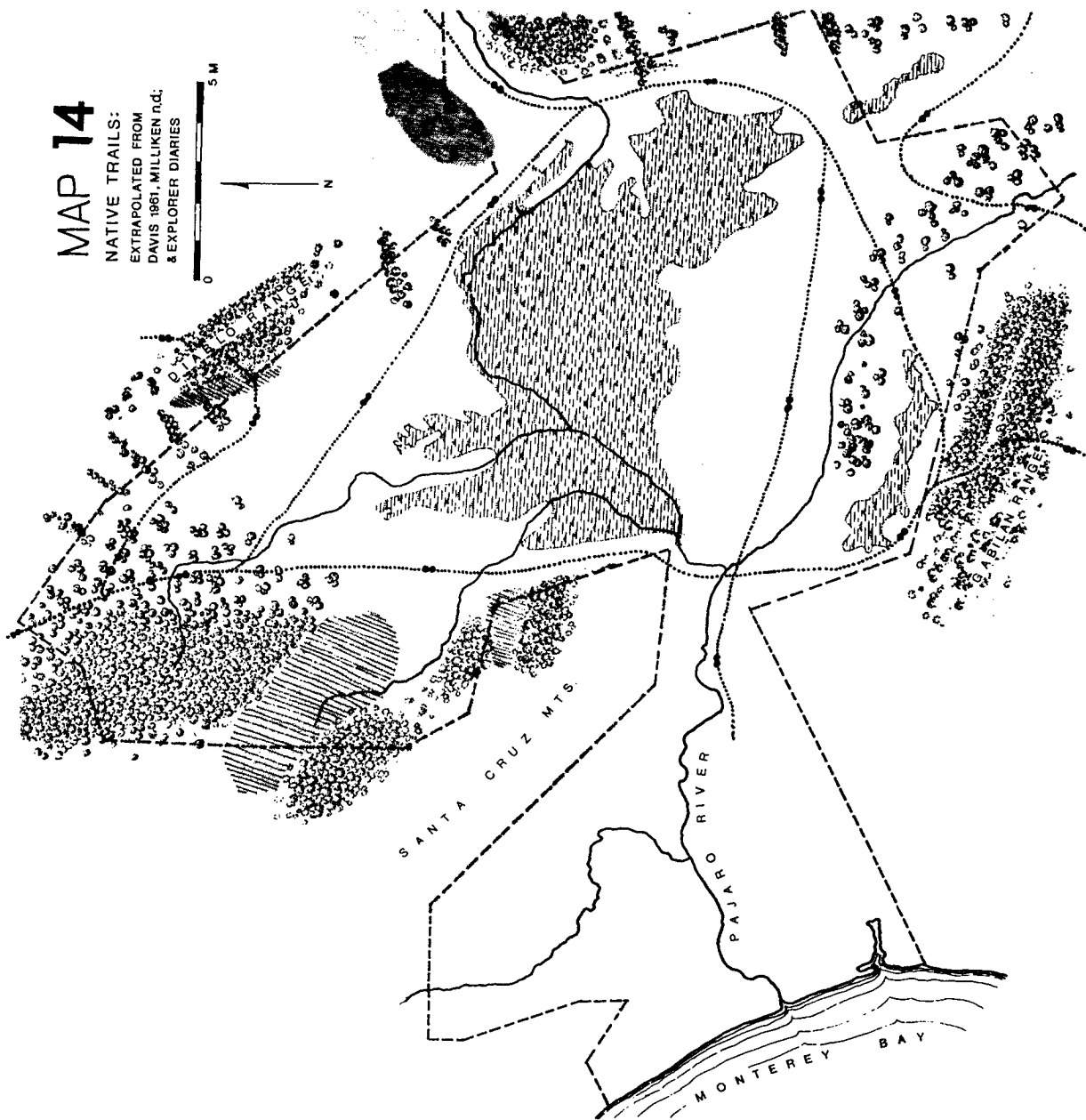
Our general impression of California Indian political and economic evolution is one of a series of positive feedback loops - each adaptation requiring greater organization and larger system-size, which in turn requires a new adaptation. Like the course of our own society's evolution, this sort of growth cannot go on forever, and presumably the occupants of different regions of California reached critical levels at different times. A useful approach to prehistoric archaeological research in the southern Santa Clara Valley, we suggest, will be to ascertain the dynamic relationship between local societies and their environment, to find out what adaptive options they adopted, and to observe the results of these options. The data produced by our study provide a basis for some very preliminary predictions and some more systematic recommendations for further research.

Participation in Trade: Very little information is available on trade within or across the study area. Davis (1961:19) indicates only that the Santa Clara and Monterey Bay Costanoans supplied the Yokuts of the San Joaquin Valley and the Sierra Miwok with salt and shellfish products and received piñon nuts from the Yokuts. Davis also plots three trails across the study area from east to west and one (El Camino Real) running north-south (Davis 1961:Map 1). Fages was following a "trail of heathen" (Bolton 1911:147) when he entered the study area in 1770, and presumably continued along it; this route later became el Camino Real, but apparently somewhat different routes were followed around las Lomerias Muertas and the marshes at different times, probably depending on ground conditions. Millikan (n.d.) records three east-west trails, some of which duplicate those that Davis (1961) abstracted from Latta (1949). All recorded trails are shown on Map 14.

We can predict that if and when trade became an important means of balancing population and environment, we should find a tendency for population to shift toward concentration along trade trails. Further, we ought to find an increasing concentration of "exotic" material, such

MAP 14

NATIVE TRAILS:
EXTRAPOLATED FROM
DAVIS 1861, MILLIKEN RD.;
& EXPLORER DIARIES



as ocean shell and obsidian in sites as the trade system develops; the nature of the trade, and the social context in which it exists, should be expressed in the organization of the sites (c.f. Finnerty et al 1970).

Presently available data provide little evidence that trade constituted an important local economic activity. While there are large sites (e.g. Penn and Pacheco: See Map 13) along some trade routes, these sites are also at the mouths of major canyons, where many resources are available in the local environment. There is an almost total dearth of shell and obsidian among the material collected off the surface of the sites and in local artifact collections as well.

Warfare: Nothing in our field data at present suggests that warfare was of great importance to village location in the study area. None of the major sites recorded appears to have been situated with defense as a prime consideration, and the fact that the Spanish expeditions usually found villages along their ways occupied and unsuspecting suggests that little effort was expended by the ethnographic people of the region on keeping track of potentially hostile groups moving along the trails.

A peculiarity of settlement distribution, on the other hand, might have some relationship to warfare. As noted in Chapter III, large occupation sites are frequently found at the mouths of canyons: the Penn site at San Juan Canyon and the Pacheco site at Pacheco Creek are examples. As Table 7 shows, none of the 18th Century expeditions noted villages - occupied or otherwise - at either site. The case is particularly striking at Penn, a very large archaeological site on which virtually every Spanish expedition camped without seeing an Indian. We can assume that Penn - and probably Pacheco - were not populated in the late 18th century. The sites are rather exposed to attack, both have access to a wide variety of resources, and both lie along major trails. The possibility that intergroup conflict might be responsible for making this combination of features maladaptive is worthy of consideration in future research.

Population Control: Needless to say, we have no evidence for deliberate population control at present. Since abortion and infanticide would be the expectable means of effecting such control, evidence might be sought among mortuary populations.

Non-sedentism: The evidence of depopulation at large sites like Penn and Pacheco can also be taken as evidence for non-sedentary settlement. In general, however, the case for seasonal or other periodic population movements does not appear to be especially strong. The 18th century expeditionaries mention abandoned villages, but only Anza and Font, in the Diablo Range, seem sure that the villages are seasonally occupied, and even in this case it is not certain that the villages encountered are not camps used only by special task groups. Mission records suggest that to the south of the study area at least, dialect groups may have been represented by many small non-localized populations (see Chapter III), but the evidence for nucleated centers increases to the north. Excavations in the future may reveal details of village

	Upper San Juan Canyon	Penn Site	San Juan Valley	Bolsa Region	Pacheco Site	Gap Region	Gilroy Region	Diablo Range
Danti/Sal September	N	-	O	X	-	N	O	N
Fages November	N	-	-	X	-	N	N	N
Palou November	X	-	X?	-	N	N	X	N
Fages/Crespi March	N	-	-	X	N	N	X	N
Anza/Font March	N	-	N	N	N	X	-	N
Anza/Font April	N	-	N	N	N	N	X	O*

X Extant village(s)
O Abandoned
village(s)
- No village(s)
N Not visited or
described

*"not inhabited by heathen at present, but in the season of
the fruits mentioned above (acorns, buckeyes), some Indians
go to gather them" - Anza

TABLE 7

SEASONAL OCCUPATION OF SITES AND REGIONS
WITHIN STUDY AREA, BASED ON 18th CENTURY ACCOUNTS

organization, population structure, and midden composition that will pertain to the permanency of particular sites during particular time periods (c.f. Galdikas-Brindamour 1970).

On the preceding pages we have speculated on the pre-mission culture-history of the study area in the context of some very general (Appendix 3) and slightly more specific (T. King n.d.) hypotheses about cultural systematics. Comparing these speculations with archaeological reality, and thus in part testing the hypotheses, can provide a basis for archaeological research in the future when salvage excavations are necessary.

A Research Design for History

As archaeologists, we are concerned with the processes that characterize culture change. We want to know why it is that one subculture may be assimilated into an overall culture more rapidly, more thoroughly, or with less disruption than another. We want to know about the effects that a change in the natural or social environment may have on the cultural elements that interact with that environment - which are changed, how, and why?

Such questions, which pertain to very basic problems about the nature of cultural systems, should be at least as amenable to investigation in historic sites as in prehistoric, because the "cause" in a given cause-effect equation can usually be controlled. If we wish to ask, for example, about the effect of new immigration on previously immigrant occupational groups, we can ascertain with some ease from documentary and informant sources just when a new immigrant group - the Filipinos, for example, entered the area. Presumably, we should then be able to seek out the sites representative of earlier immigrants still resident in the Valley when the Filipinos entered - the Japanese, or the Mexicans - and look for evidence of predictable changes.

Addressing or even formulating such questions, however, brings us face to face with a difficulty that is familiar to historical archaeologists. The field of historical archaeology is new; its national society was only formed six years ago, and the theoretical literature is sketchy at best. Archaeologists, including ourselves, have not been intensively trained in the application of anthropological theory to the archaeological remains of complex industrialized societies, and there has not been enough investigation of recent historical sites to permit us to develop reasonable expectations about what can and cannot reasonably be done with such sites.

To continue our example, if we decide from documentary sources or general theoretical models that upon the Filipino immigration the new immigrants and the Japanese should have entered into a symbiotic relationship, how are we going to subject this decision to archaeological test? Presumably we will have to study the spatial and functional relationships between contemporaneous sites representing Japanese and Filipino residents, but how are we to distinguish between them? How are we to define functional relationships? These questions are not by any means insoluble, but they require acquisition of a certain amount

of basic information about just what different sorts of groups and relationships look like in and on the ground, and such information is not presently available.

We suggest, then, that the first operational necessity for historical archaeology in the southern Santa Clara Valley is the characterization of subpopulations as they are manifested in the archaeological record. The subpopulation, however, is not definable merely as "Filipino", "Chinese", or "large landowner"; at least three components must be considered:

First, a subpopulation will belong to some sort of occupational type, such as "migrant labor" or "large landowner". Secondly, the subpopulation will have some sort of group identity: "Filipino", "Okie", etc. Finally, the subpopulation will exist in the area in and through time; not only will it reside in the Valley during a period characterized by particular socio-economic conditions and changes, but it will also undergo change that is directional - from migrant worker to small landowner, for example. This change will typically relate to assimilation or nonassimilation into the overall society. Characterization of the subpopulation must take these features into account.

The general operational necessity described above can be broken down into several questions:

1. What are the cultural features that distinguish the various subcultures that have occupied the southern Santa Clara Valley, and how are these represented archaeologically?
2. How are these cultural features interrelated with each other as component subsystems within the larger subcultural system? What are the archaeological concomitants of these relationships?
3. How have the various subcultures been integrated into the larger cultural system, in terms of their occupational types, their relationship to the condition of the overall system during their period of occupancy, and their reactions to change in the system through time?
4. What features of each subculture are archaeologically visible that can be used for cross-cultural analysis, between subpopulations, between occupational groups, or between this area and others?

An example will serve to demonstrate how such questions can be addressed. Dealing with each and every subpopulation and every occupational type would be overly bulky, but a brief look at migrant workers will hopefully show how future historical archaeological research in the area might proceed.

Migrant workers in the southern Santa Clara Valley share the characteristics of seasonal employment, subsistence-level wages, marginal

political power, and descent from minority racial or ethnic groups. Most migrant workers came to the southern Santa Clara Valley as groups of single men seeking economic advancement, expecting to return to their native homes. Each group, upon its arrival, provides an example of a cultural adaptation to a pre-existent agricultural pattern, which was designed to keep them poor and mobile. The arrival of large numbers of dust-bowlers was an example of adaptation under crisis conditions. Given these distinguishing features, certain definite questions can be asked about the subpopulations that characterize the migrant worker occupational type, that can possibly be answered using the archaeological record.

What parts of their native culture were brought with them by the incoming migrant workers? It is possible that, since most migrants were poor and were immigrating under conditions of stress, the selection of materials from the old culture would be a measure of what they felt was essential in maintaining their group identity. Some of these materials should be preserved in archaeological sites representative of each subpopulation. A related question is: which parts of the native culture were the most persistent? Which elements of the old life did the immigrants hold onto longest? Such elements may be reflected not only in the material contents of archaeological sites but in their distribution; changes in that distribution should indicate change in the system and should represent the course of acculturation within the subpopulation.

The above questions essentially proceed from the primary need to define subpopulations archaeologically. Similar kinds of specific questions can be developed on the basis of the related problems previously noted. We might ask, for example, about the relationships between migrant farm workers and other parts of the migrant labor subculture (plant workers, specialized storekeepers, etc.). We might seek to ascertain the effect that migrancy or mobility itself has on the social organization of the various subpopulations. What kind of social organization would develop in unisex communities of migrant laborers who believed that their residence in the area would be brief? We might ask about integration into the larger cultural system by investigating the relationships between migrants and other occupational types such as tenant farmers and landowners, and changes in these relationships through time. In what ways, for example, might Japanese social organization change as the shift was made from migrant labor to land ownership? In what ways did it come to resemble that of the overall society? Assuming we can obtain data pertinent to such questions, we might then seek to address cross-cultural studies aimed, for example, at determining the relationships between occupational mobility and economic marginality, or at defining the effects of a conviction that one's residence in a place will be of short duration.

In short, before we can reasonably expect to address pertinent anthropological problems using the data of historical archaeology in the study area, we need to investigate small questions about what a given group or a given relationship looks like in the archaeological record. We have provided several examples of such questions; similar ones can

be generated about secularized Indian communities and ranchos during the Spanish-Mexican Period, about small towns and large ranch centers during the Early American Period, and so on. Development and implementation of specific projects to address such questions will have to await the time when research interests or salvage requirements make it feasible to focus attention on particular kinds of historic sites.

CHAPTER VI

COMMUNITY SIGNIFICANCE

Summary

In addition to their scientific significance, archaeological sites are often important to the communities in which they exist or to particular interest groups for reasons of their educational potential or religious or cultural value.

Prehistoric resources are apparently of considerable interest to people and agencies within the study area, but no very clear-cut criteria for judging community significance have emerged from this interest. California Indian people are naturally interested in the protection of such sites; this interest is focussed particularly on cemeteries and can be abstracted as a simple demand that Indian graves be treated with the same respect as those of white people.

There is a great deal of interest in historic resources in the study area, expressed in city and county policies and the activities of local groups for the protection of historic buildings and areas. Again, criteria for judging significance are difficult to come by, but representativeness in terms of the various cultural groups that have played a part in building the local communities, architectural significance, and association with important individuals or events appear to be the currently important bases for deciding that a given structure or site is worthy of attention.

Introduction

Apart from their general significance to modern society as sources of scientific information, some archaeological sites and kinds of archaeological sites have specific value to local communities or to particular interest groups as education, aesthetic, religico-cultural, or interpretive resources. In this chapter we will briefly discuss something of the community value of San Felipe area archaeological resources as we have recorded them.

Prehistoric Resources

The general level of public interest in local prehistory appears to be fairly high. Three avocational archaeological societies operate in the general vicinity of the study area: the Santa Clara County, Santa Cruz County, and Monterey County Archaeological Societies. While no group is presently organized to develop or channel public interest in archaeology within the southern Santa Clara Valley itself, the enthusiasm and informed interest with which a lecture on our study was received by a meeting of the San Juan Bautista Historical Society suggests that the potential for the development of such a group is considerable. At present, however, none of the cities or counties of the study area have indicated specific interest in the use of particular sites for public-interpretive or other purposes. Indian sites, if known, tend to be

mentioned in the inventories of historical resources being compiled by the various cities and counties, but no tangible steps have been taken to acquire or otherwise do anything with such sites, and there does not appear to be any particular direction to local public interest in the subject. An exception is San Juan Bautista, where a number of local citizens and the Historical Society are working for the creation of an Indian museum in connection with the hoped-for excavation and reconstruction of the neophyte barracks adjacent to the Mission (Penn, personal communication 1973). Concern has also been expressed in San Juan Bautista about the possibility of serious damage to the prehistoric resources of the Penn Site at the mouth of San Juan Canyon, either as a result of construction on San Felipe facilities or during demolition and removal of the Ideal Portland Cement plant.

In general, however, it is safe to say that while public interest in prehistoric resources is at a high level and rising, this interest has not yet translated itself into a set of community values that can be applied to specific sites to measure their significance. Some sites, especially those with impressive surface features like the extensive bedrock mortar complexes at the Uvas site-cluster, are obviously amenable to use in public interpretation, but no definite plans appear to be underway to make use of such sites.

Prehistoric resources are of obvious importance to California's Indian population, both as sources of information and as religiously and culturally sacred spots. This view of prehistoric sites as sacred, of course, applies most strongly to cemetery locations (cf. Ad Hoc Committee 1973). We could find no evidence of any organized group actually representing Indians resident in or descended from residents of the study area, so we turned to Mr. George Woodard of the American Indian Council of Santa Clara County for advice and recommendations. Mr. Woodard expressed particular concern about the systematic integration of cemetery protection into general planning. He commented that while surface reconnaissance for archaeological resources prior to construction projects was important, provision also has to be made for the protection of burials found during construction, since many local cemetery and village sites cannot be accurately identified on the surface. He also commented that archaeological resource protection should include not only protection of data valuable to archaeologists, but also those features of the prehistoric record that are of cultural value to Indian people. While not opposed to progress or land development per se, according to Mr. Woodard, Indian people are opposed to the gratuitous excavation of their dead, by construction projects, archaeologists, or others (Woodard, personal communication 1973). Mr. Woodard's avowed concerns are equivalent to those voiced by Indian people elsewhere in the state and nation, and can be abstracted into the following statement of significance:

THE BURIAL PLACES OF CALIFORNIA INDIANS SHOULD BE CONSIDERED AS SACRED AS THE BURIAL PLACES OF ANY OTHER PEOPLE. TO THE GREATEST EXTENT POSSIBLE THEY SHOULD BE CAREFULLY IDENTIFIED, PROTECTED, AND HELD SAFE FROM IMPACT BY CONSTRUCTION, VANDALISM, AND OTHER

DISTURBANCES. SCIENTIFIC OR OTHER CURIOSITY IS NOT SUFFICIENT REASON TO DISINTER THE DEAD. WHEN IT IS NECESSARY TO ENGAGE IN DISINTERMENT, IT SHOULD BE DONE NOT ONLY WITH THE GREATEST SCIENTIFIC CARE BUT WITH DECENT RESPECT FOR THE DECEASED.

Mr. Woodard also expressed concern, echoing that of many other Indian people, for the way that Indians are portrayed in the popular literature and the educational system. The American Indian Council is working toward the creation of a large Indian cultural and educational center in the San Jose area; though this project is beyond the scope of our study to consider, the interest of the Council does suggest that Indian people will support the non-destructive use of archaeological sites for purposes of legitimate and honest education.

Historic Resources

There is growing concern on the part of citizens in our project area for the preservation, maintenance, and protection of historic resources. Implicit in this concern is a recognition of the values which historic resources have in the community. These values can be measured from many viewpoints depending on the interests of those who are making the evaluation. On a general level, one can say that historic resources have value because knowledge of the past fulfills a basic need of human society:

"In its broadest connotation, history is a basic need, a very condition of human societies which are distinguished from each other precisely in that they are constituted by historical, rather than merely by innate biological inheritance ... Human societies exist in the last resort, because their members are aware of belonging to them, and a major factor in this is a consciousness of sharing a common past." (Clark 1957:255)

Others have more specific concerns: planners are interested in the potential of certain historic sites for education, recreation, and community involvement. Particular groups or individuals see value in historic resources that directly pertain to their specific heritage. Architects and persons with aesthetic concerns support the protection of sites and structures whose beauty and structural interest add variety to the visual and experiential environment.

This complex set of generally compatible interests has resulted in the development of various plans and policies by city and county agencies, in the growth of historical societies, and in active programs by volunteer groups. This year Santa Clara County passed an ordinance that creates a Historical Heritage Commission with the following policy guidelines:

"It is the policy of the County of Santa Clara to protect, preserve, and promote the historical and cultural heritage of this country so that future generations may know and appreciate the significant historical places, people, and events that have been a part of this area of our state and nation." (Sec. A6-60, No. NS 300.172).

City planners in Gilroy have written a section on historic resources in the Environmental Resources Management Element of the Gilroy General Plan. In it they state their two major concerns as preservation of the identity of the community and preservation of historic landmarks. Local historical associations are primarily concerned with preservation of their historic resources. The purpose of the Historical Society of Gilroy is:

"... to perpetuate in some fashion or manner the past of Gilroy, including all people and cultures." (Matulich, personal communication 1973)

The purpose of the Historical Society of Morgan Hill is:

"... to bring together those people interested in the history of Morgan Hill to preserve the same." (Thomas, personal communication 1973)

Richard Gularte, President of the San Juan Bautista Historical Society, states that:

"The major concern of our Society is to preserve what we have." (Gularte, personal communication 1973).

The development of criteria for judging significance among historic resources, however, has not proceeded very far (Sampson, personal communication 1973). There appears to be a general intent to preserve a representative sample of historic structures, while at the same time preserving structures that have architectural significance, housed important people, or were the scenes of important events in the development of the area. These elements should obviously be taken into account in planning; our own observations on the development of a representative sample have been provided in Chapter IV. Presumably more detailed criteria will be developed as the inventories discussed in Chapter IV are completed.

4: PLANNING

CHAPTER VII

CURRENT PROGRAMS FOR ARCHAEOLOGICAL PRESERVATION

Summary

Recommendations for planning to preserve archaeological resources clearly must be made pertinent to the existing and developing policies of cognizant agencies. This chapter outlines pertinent federal and state laws and discusses the archaeological preservation policies of the U.S. Bureau of Reclamation and Soil Conservation Service, the counties of Santa Clara, San Benito, Santa Cruz, and Monterey, and the cities of Morgan Hill, Gilroy, Hollister, and San Juan Bautista, as a prelude to the development of explicit recommendations for planning.

Introduction

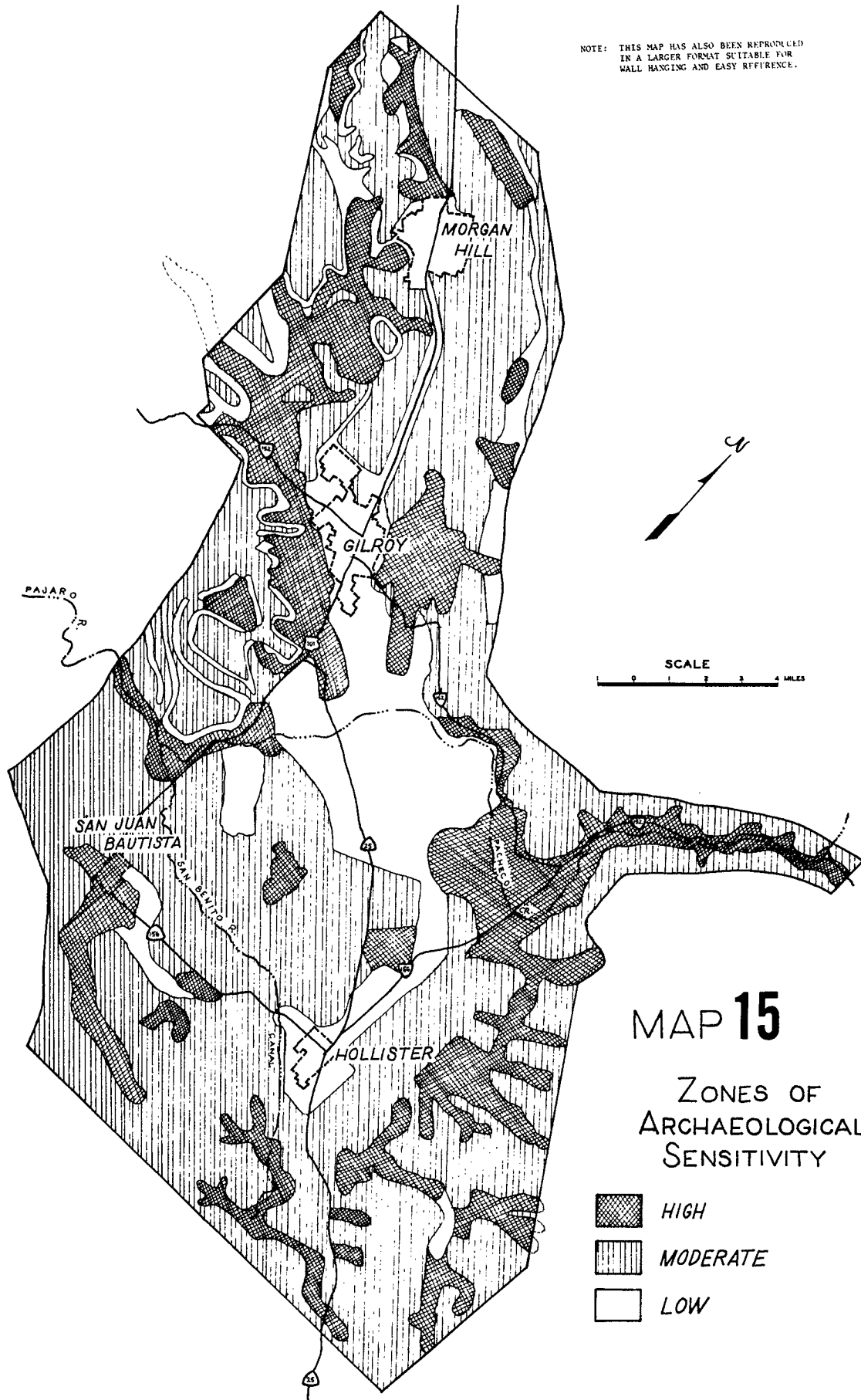
Map 15 shows general areas in which conflicts between the needs of archaeological preservation and modern land-use are likely to occur. In order to avoid or resolve conflicts occurring as results of modern land-use in such areas, specific policies must be developed by agencies having jurisdiction or advisory authority over the land-uses. In proposing such policies, it is first necessary to examine the present positions of the pertinent agencies toward archaeological values.

The Legal Context

Federal: Federal agencies engage in archaeological resource protection under terms of the Antiquities Act of 1906 (P.L. 34-209; 34 Stat. 225), the Historic Preservation Act of 1935 (P.L. 74-292; 49 Stat. 666), the Reservoir Salvage Act of 1960 (P.L. 86-523; 74 Stat. 220), the Historic Sites Preservation Act of 1966 (P.L. 89-665; 80 Stat. 915), the National Environmental Policy Act (NEPA) of 1969 (P.L. 91-190; 83 Stat. 852), and Executive Order 11593 of 1971 (cf. McGimsey 1972). The Executive Order is perhaps the most explicit statement of federal policy, and the one that most clearly outlines operational requirements. All federal agencies are directed to survey lands under their jurisdiction to locate areas qualifying for inclusion on the National Register of Historic Places, and to exercise caution in the interim until such surveys are completed, to avoid unnecessary damage to such areas.




State: California has several laws pertaining specifically to archaeological preservation and is currently studying development of a comprehensive program of heritage protection (cf. McGimsey 1972: 130-133; Moratto 1973; Task Force 1973). The most far-reaching state law now in force pertinent to archaeological planning, however, is the California Environmental Quality Act (CEQA) of 1970 (California Public Resources Code Sec. 21000 et seq.). The CEQA requires consideration of environmental factors in the course of planning on all projects in which public agencies are involved in a discretionary role, and defines historic values among elements of the environment whose preservation is in the public interest. Guidelines issued by the State Resources Agency

NOTE: THIS MAP HAS ALSO BEEN REPRODUCED
IN A LARGER FORMAT SUITABLE FOR
WALL HANGING AND EASY REFERENCE.



MAP 15

ZONES OF ARCHAEOLOGICAL SENSITIVITY

-  HIGH
-  MODERATE
-  LOW

allude to historic resource protection (Resources 1973:Sect. 15011(c)), and the Secretary for Resources has indicated that it is the interpretation of his agency that archaeological values should be considered in environmental planning (Livermore 1973; see Appendix IV).

The role of archaeology in the preparation of Environmental Impact Reports required under terms of the CEQA has recently been clarified in the case of Brown et al vs. Department of General Services et al (Sacramento S.C. #236723, 1973). Ruling that an archaeological sample excavation undertaken by the State Department of General Services for purposes of Environmental Impact Report preparation could proceed, the Sacramento Superior Court stated that:

"It would appear that no intelligent evaluation of the historical significance of the ... site could possibly be made without including therein the information to be obtained from the work (sic: archaeological sample excavation) directed by Chapter 103, Statutes of 1973, and any environmental impact report prepared without such information would be seriously deficient." (See Appendix VI)

Thus, both federal and state law call for a consideration of archaeological resources in the course of planning on projects carried out, assisted, or permitted by public agencies. The means by which different agencies provide for such consideration vary widely. The Department of Interior (DeClary 1973) and the National Park Service (Schovill et al 1972) have drafted guidelines for archaeological evaluation under terms of the NEPA, and the Society for California Archaeology has drafted and widely circulated similar recommended procedures for evaluations under terms of the CEQA (King et al 1973; see Appendix IV). It is not the purpose of this section to reiterate or analyze these guidelines, but to examine the current policies of pertinent agencies to ascertain the most efficient means of providing for the legally mandated archaeological preservation.

Federal Agencies

The Bureau of Reclamation and the Soil Conservation Service (SCS) appear to be the major federal agencies concerned with the study area. The Bureau has provided for archaeological salvage in advance of construction projects for a number of years and regularly consults with the National Park Service to obtain archaeological input into Environmental Impact Statements (EIS) and other elements of project planning. To our knowledge, however, the Bureau has not yet developed a definite policy for mitigating the indirect effects of its actions. The SCS recognizes a broad responsibility toward environmental protection. In assisting local organizations in programs of watershed management, the SCS says:

"It is our responsibility to bring to the attention of local organizations opportunities to protect or improve the environment ... The plan the sponsors select should provide for the wise use and management of all ... natural resources in the watershed consistent with local and national goals." (SCS 1972:101.311)

A clear intent to gain information on archaeological resources and provide for their protection is an established part of SCS policy (SCS 1972: 101.32, 112.22).

In practice, however, the SCS relies upon the National Park Service to provide archaeological surveys, salvage, etc. Such surveys and salvage, when they have been undertaken at all, have typically been restricted to sites endangered directly by SCS activities; the archaeological concomitants of the agricultural expansion fostered by SCS assistance have been scantily considered.

In large part, the reason that agencies like the SCS and the Bureau have not developed or promoted programs to alleviate the indirect impacts of their programs appears to be a contradiction within existing federal law. While the NEPA and Executive Order 11593 indicate that federal agencies must explore all possible ways to lessen the broad impacts of their actions on archaeological resources, the Reservoir Salvage Act of 1960, under which the Bureau and SCS have organized their archaeological programs, specifies that it is the National Park Service's responsibility to fund archaeological surveys and salvage. The Reservoir Salvage Act really has little pertinence to studies required by the NEPA and the Executive Order; it merely provides for the salvage of archaeological data, not for the systematic integration of archaeological considerations into project planning. Nonetheless, the presence of the Reservoir Salvage Act and the salvage policies based on it have tended to direct federal agencies and their contracting archaeologists toward a definition of "impact mitigation" that stresses salvage excavation of sites subject to direct impact. That such a definition is overly narrow is strongly suggested by the broad wording of the NEPA itself:

"... it is the continuing responsibility of the Federal Government to use all practicable means ... to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may ... preserve important historic, cultural, and natural aspects of our national heritage ..." (NEPA Sect. 101(a))

Surely "all practicable means" are not limited to the salvage of data directly endangered by federal construction. Developing more comprehensive approaches to archaeological resource management is a major challenge for agencies and archaeologists alike.

Counties (For Monterey and Santa Cruz see Appendix V)

The governments of Santa Clara and San Benito Counties have adopted policies pertinent to archaeological resource management.

The County of Santa Clara has included a detailed consideration of archaeological resources in the conservation element of its general plan. The value of prehistoric and historic resources to the county is expressed as follows:

"Knowledge of the past is a part of everyone's basic heritage. Such knowledge is essential to understanding the present and looking forward to the future. Availability of this knowledge can be viewed as one of the basic rights of each of us. Because this knowledge does belong to all, it should not be within the power of any individual or organization to deprive everyone else of essential segments of that knowledge unless there are overriding public concerns--yet that is what happens when prehistoric or historic sites are destroyed without record and without adequate reason." (Santa Clara County 1973a:90).

"Historical landmarks help give identity to a community. In our present age of mass production, everything is too much alike. Automobiles, tract houses, service stations, supermarkets, mailboxes, billboards are all visual stamps that make one community little different from the next. Historical landmarks are one-of-a-kind oases of individual expression in a desert of sameness. They can help to make one community a little bit different from its neighboring communities. Pride in these relics of local history can stimulate pride in one's community.

"Historical landmarks remind us of our past. The lessons of history often give us a better understanding of the present and a better insight into what the future holds. We can admire the energy and initiative of our forebears as they tamed a land of enormous scale and unlimited resources. We can share their appreciation of the beautiful setting in which they found themselves.

"Historical landmarks are a source of stimulation and an impetus for better design. We can take inspiration from the craftsmanship, pride, and dignity that was put into structures of other eras.

"Historical landmarks add to our culture, education, and enjoyment by keeping history alive and visual. Photos and written records are not enough. We need tangible reminders. Historical landmarks can be living museums. Nowhere can we capture the feeling of past eras so well as when we can see an authentic structure of past times." (Santa Clara County 1973a:84-85).

Historic and prehistoric resources are being inventoried and studied by the County Historic Heritage Commission. The Conservation Element wisely recognizes that no systematic archaeological survey of the county has been made, and that as a result only a scattered few prehistoric site locations are known. Rather than attempting to map these known sites, the Element proposes four locational categories within which prehistoric sites can be expected:

"1. At the point where the streams from the hills break out on the edge of the valley. (On the hillside edge near the stream and the stream's alluvial fan onto the valley floor.)

- "2. Areas on streams or sloughs near to the historic edge of the San Francisco Bay Marsh.
- "3. Mounds which were created by early man for a variety of reasons. Most of the significant mounds are on the floor of the valley.
- "4. Shell mounds and midden mounds created by early man along the sloughs or in the marsh areas of the San Francisco baylands. (A number of these sites have been obscured and are not apparent due to flood control dredging and diking. Also the present salt pond dikes and dredging and the covering of pondwaters may obscure a number of County Sites.)" (Santa Clara County 1973a:93).

The Element also suggests six characteristics of archaeologically sensitive areas:

- "1. The southerly side of a hill or hills on or near a flowing stream with acorn-bearing oak trees (or where historically there were oak trees).
- "2. Sites by or near springs. (The spring is now existent or was existent.) If oak trees are or were near, and smooth rock suitable for grinding holes is close by, the chance that there is an archaeological site or sites in the area is increased.
- "3. Areas of obvious discoloration and texture difference of the soil in the immediate area from that of the native soil, resulting from the heat and carbon of camp fires. Surface fragments of pottery and flakes of arrows and bone are present. The signs indicate there was a large village located in the area, one which was occupied for an extensive period of time.
- "4. Shell mounds or the evidence of some significant piles of clam or mussel shells along bay front streams or in the baylands marsh area.
- "5. Rock out-cropping with evidence of petroglyphs (design cut into the stone) on the rock. Often such work indicates an archaeological site or sites nearby.
- "6. A cave or rock overhang with evidence of pictographs (pictures on stone) or possibly petroglyphs on stones may indicate a nearby archaeological site." (Santa Clara County 1973a:93-94).

The Element suggests that:

"Archeologic and paleontologic sites can usually be either preserved or scientifically excavated in advance of construction or other projects, if they are identified and evaluated early in the planning process. If archeological values are assessed when a project is first being planned, it will usually be possible to develop plans in such a way that significant sites are preserved and used to

enhance the project as educational and public-interest foci. If such preservation is not possible, it is usually possible to plan for archeological excavation of endangered sites; the cost of such excavation is usually quite low relative to total project cost, especially when the educational, scientific and public-interest value of the excavation is computed. To avoid conflicts and provide for a smoothly operating program of archeological preservation, it is necessary for the County to adopt specific, clear-cut policies and guidelines." (Santa Clara County 1973a:96).

It goes on to propose the following policies:

- "1. An integrated program of protection of high priority archeologic and paleontologic resources should be undertaken under the sponsorship of the County Historic Heritage Commission, an advisory body to the Board of Supervisors of Santa Clara County. This work should be done in close cooperation with the cities of the County.
 - "2. Producers and reviewers of Environmental Impact Statements for both public and private development should take into consideration the effect of the proposed development on archeologic resources.
 - "3. Planning for construction projects should include investigation of the possibility of the site containing valuable archeologic remains. Measures to preserve them or remove and record them with the assistance of archeologists should be provided for.
 - "4. Sites or archeologic or paleontologic value should be protected by special historic-archeologic zoning provisions.
 - "5. A central archeologic museum should be established in the County as a repository for archeologic remains and artifacts and as an interpretive center for better public understanding of our archeologic heritage.
- "The public objectives of the center would include: Community involvement programs, public education programs, local employment opportunities, advice to governmental agencies of the County with respect to public conservation and recreation goals. The Center would work in close liaison with the State agencies and various park agencies (Federal, State, regional, County, and city) in identifying major sites such as village or occupation burial sites and rock paintings for special treatment within existing or new parks. Other public opportunities for service to the County could be developed as the Center matured and the people looked to it for help." (Santa Clara County 1973a:97).
- "1. The newly created County Historic Heritage Commission should undertake a new inventory and evaluation of historical landmarks remaining in Santa Clara County.

"2. The Commission should establish priorities for historical landmark protection and should undertake to have the high priority landmarks declared a "national historical landmark or historical site" or a "state landmark or historical site." In this effort, the Commission should work in close coordination with the cities of the County and with city historical commissions.

"3. Local government should protect historic landmarks by placing them in a special "historic" zoning district.

"4. Funds should be provided on a regular basis in the budget of the County Historic Heritage Commission to be used to match federal and state funds for historic landmark acquisition and preservation-- or to match funds raised by private subscription.

"5. Procedures should be established for encouraging developers to donate historical structures about to be demolished, so that they could be moved to a historical park or other appropriate site.

"6. Commercial and public uses of historic structures should be encouraged as a means of their preservation.

"7. Consideration should be given to providing professional staff for the County Historic Heritage Commission.

"8. Environmental Impact Statements for any public or private development should include consideration of whether or not a historical landmark will be adversely affected. If it is, the project plans should include provisions for the removal of the landmark to a new site, accommodation of the landmark within the site plan, or ameliorating measures that would lessen the impact.

"9. Programs of public information should be undertaken so as to make owners aware of the value of historic buildings and as a means to encourage their maintenance.

"10. Heritage trees should be inventoried and protected by appropriate ordinances.

"11. Cemeteries should be given special consideration as historic places of interest." (Santa Clara County 1973a:88-89).

The Urban Development/Open Space Subcommittee of the Planning Policy Committee of Santa Clara County has also endorsed the concept of archaeological site preservation:

"VII. OPEN SPACE FOR THE PROTECTION OF HISTORIC AND ARCHEOLOGICAL RESOURCES

"Findings: 1. Historic landmarks and archeological sites may be lost if they are not protected from urban development.

- "POLICIES:
1. BOTH PUBLIC AND PRIVATE EFFORTS SHOULD BE DIRECTED TO PRESERVING HISTORICAL LANDMARKS, ESPECIALLY THOSE IDENTIFIED IN THE "PLAN OF REGIONAL PARKS," WHICH HAVE OPEN SPACE POTENTIAL.
 2. AREAS AND SITES OF ARCHAEOLOGICAL SIGNIFICANCE SHOULD BE PROTECTED FROM DEVELOPMENT."
(Urban Development/Open Space Plan 1972:50)

The Environmental Assessment check-off sheet used by Santa Clara County in deciding whether a project requires preparation of an Environmental Impact Report includes a question about whether the "Project will affect an historical or archaeological site." (Santa Clara County 1973b:Exh.A:3), and consideration of "Historic, archaeological, cultural features" is required by the County's Environmental Impact Report Guidelines (Santa Clara County 1973c:7). The County Environmental Administrative Manual does not provide specific criteria for deciding whether a project may affect an archaeological site, however, and like the state guidelines themselves (Resources 1973), it leaves a number of openings for potentially damaging projects to be declared categorically exempt or subject to negative declarations (cf. Santa Clara County 1973b Exhibit E, Class 2:3, Class 3:A, Class 7:1).

Another problem may arise from the lack of specific directions regarding impact mitigation in the County EIR review procedures (Santa Clara County 1973b:Article 5). If archaeological resources are identified in an EIR, will mitigation of project impacts upon the resources be made a condition of any permit granted on the project? Presumably no permit should be granted without provision for reasonable impact-mitigation (Friends of Mammoth vs. County of Mono: Footnote 8), but the County procedures, which stress preparation, review and adoption of EIRs, do not explicitly set forth a format for the placement of environmental conditions on permits. That EIRs can be adopted without containing adequate consideration of archaeological impacts or mitigation measures is indicated by recent actions of the city of San Jose in accepting an inadequate EIR, over archaeological objections, on the proposed Lake Anderson Development, adjacent to the San Felipe Study area (See Appendix IV).

The above comments are not meant to imply criticism of Santa Clara County's program of archaeological resource management; indeed, the total program detailed in the various documents cited is one of the most comprehensive we have seen. Most of the problems alluded to above are shared with other counties and are inherent in the State EQA Guidelines or in the planning process itself. Nonetheless, they are problems that need to be considered.

The County of San Benito has adopted guidelines for implementation of the CEQA; its Environmental Evaluation Checklist, on the basis of which decisions are to be made about the need for EIR preparation, includes the question:

"Does the project site involve a known historical or archeological site?" (San Benito County 1973:36:C:2).

Here again, however, no criteria are given for deciding whether a project may threaten an archaeological site, although it is noted that "The applicant should be able to explain or substantiate his response to every question." Again, too, the State list of categorical exemptions is followed closely, although some exempted activities may be quite damaging to archaeological resources.

Cities

The City of Morgan Hill is studying archaeological site distribution in preparing its open space and conservation element, and expects archaeological values to be considered in preparation of EIRs. An Environmental Assessment Questionnaire includes a question about the effect of the project on archaeological sites (Morgan Hill 1973:5). At present, the Planning Department lacks a clear basis for deciding whether a project is likely to have an impact on such sites (Coats, personal communication 1973).

The City of Gilroy has adopted a far-sighted and extensive program of EIR preparation and review that insures preparation of EIRs by disinterested parties and extensive review by city government and the public (Gilroy 1973a). An Environmental Resources Management Element, now completed in draft form, considers prehistoric and historic resources at length and expresses a policy of preservation. This policy, unfortunately, does not spell out guidelines for identification and mitigation of project impacts on archaeological resources (Gilroy 1973b). Like Morgan Hill, Gilroy presently has no clear information on archaeologically sensitive locations within its planning area.

The City of Hollister combines its criteria for EIR preparation with those for preparation of "Community Affect Reports," in a document that appears weighted rather heavily toward economic considerations (Hollister 1973). No mention of archaeological resources is made in the criteria.

The City of San Juan Bautista uses San Benito County's EIR guidelines and includes a space for consideration of "known archaeological sites" in its Environmental Evaluation Checklist (San Juan Bautista 1973:5). At present, however, the city has no systematic way of knowing about such sites. An Open Space Element has been prepared for the city (San Juan Bautista 1972); considering the city's rich historic character, this document is surprisingly lacking in data or recommendations pertaining to the preservation and public use of archaeological resources.

In summation: All cities, counties, and federal agencies within the study area, with the possible exception of Hollister, have stated policies favorable to the preservation of archaeological resources. All have legal obligations to consider such resources in planning.

None has a fully effective means of considering or protecting such resources. The most common problems for local agencies are in identifying resources with which to be concerned: i.e. ascertaining where conflicts between modern land-use and the need for archaeological resource protection are likely to occur and need to be analyzed and dealt with. The most significant unsolved problem for federal agencies lies in identifying and ameliorating the indirect impacts of their activities. In the following chapter we will advance a plan that we hope will be of value in coping with these problems.

CHAPTER VIII

RECOMMENDATIONS FOR ARCHAEOLOGICAL PROTECTION

Summary

To protect archaeological sites from destruction as an indirect result of the San Felipe Division, we recommend that:

- a) Counties and cities use Map 15 to decide where EIRs and other environmental evaluations must include an archaeological component for the identification and evaluation of prehistoric sites. Full professional surveys should be made and mitigation measures required.
- b) Inventories of historic sites should be broadened and systematized.
- c) Counties, cities, and the state should acquire and preserve a representative sample of prehistoric and historic sites as parks and monuments, with appropriate controls.
- d) The federal government should establish a regional archaeological team to handle the destruction of archaeological sites by agriculture.

Special recommendations for the city of San Juan Bautista are also provided.

General Scope of Recommendations

In this section we advance recommendations designed to cope with the general, indirect impact of San Felipe water use on archaeological resources in the study area. The input of San Felipe water will, in general, permit the expansion of cities and of irrigation agriculture; it is thus at urban growth in all its forms and at heavy agriculture that our recommendations are directed. Since the federal government does not maintain jurisdiction over most forms of local land-use, our recommendations are necessarily meant in large part for use by the local agencies that do have such jurisdiction. We do, however, interpret the requirements of NEPA and Executive Order 11593 to indicate that the federal government should take an active interest in the archaeological management policies of the agencies that are, in this case, its clients, and should actively encourage these agencies to adopt policies that will reduce the overall deleterious effects of the federal action.

Basis for Map 15

Map 15 portrays general areas of different archaeological sensitivity, with respect to prehistoric sites only. Definition of the areas is based on extrapolation from our field sample and background data, and on practical observation of present land-use. It should be noted

that our predictions are consistent with those included in the Santa Clara County Conservation Element to the extent that canyon mouths and areas around springs and other water sources are recognized as highly sensitive, but we are also able to categorize areas like the valley floor that were not covered consistently by the element.

High sensitivity zones are those in which prehistoric sites of various kinds are very likely to occur. They include canyons, particularly their mouths, relatively intact riverbanks, and the margins of extinct marshes.

Moderate sensitivity zones are those in which sites may very well occur but in which their density is likely to be relatively low. Such zones include alluvial plains, low or broken or rocky slopes, and ridge crests. Areas that would normally be classed as highly sensitive but in which our surface reconnaissance did not reveal archaeological sites are also placed in this class.

Low sensitivity zones are those in which the probability that intact prehistoric sites exist is quite low. They include lowland marsh areas, steep, non-rocky slopes, and heavily urbanized lands.

The map, of course, is designed only as a general guide; specific locations within high and moderate sensitivity zones may bear little likelihood of containing intact prehistoric sites, due to serious human modifications or other factors. Conversely, prehistoric sites may sometimes be preserved in urban areas and on other apparently disrupted land.

Use of Map 15

Map 15 can be used as a basis for deciding whether a given project is likely to affect prehistoric archaeological resources.

Any project affecting a high sensitivity zone can be assumed to carry a high probability of impacting a prehistoric site, particularly if the land surface involved is relatively undisturbed.

Therefore, any EIR prepared on a project affecting a high sensitivity zone should include an archaeological evaluation, if the project will directly or indirectly affect the land surface.

Projects that normally would not require an EIR - that might qualify as categorical exemptions or require only negative declarations, for example - should also be very seriously considered when they fall within a high sensitivity zone. A project that may have very limited and temporary impact on biotic resources - burying a conduit through grassland, for instance - may have serious and irreversible impacts on archaeological sites.

Archaeological impact evaluations should always include full field reconnaissance by qualified persons. Because of the low surface visibility of some archaeological resources (see Chapter III above), and

the difficulties involved in defining site boundaries and limits of disturbance, archaeological evaluations in this area should usually include subsurface sampling.

When archaeological sites are found to be subject to impact, provision for mitigation of impact should be made a condition of any permit issued for the subject project. Means of mitigation might include:

- a) burial of a site under fill, preferably with preliminary sample excavation to record basic data, and with minimum damage to the site surface.
- b) relocation of facilities to avoid impact.
- c) design of facilities to minimize impact (placing buildings on piles, etc.)
- d) salvage excavation by qualified archaeologists.

The last option, salvage excavation, tends to be expensive and is itself destructive, so it should be considered the least desirable means of impact-mitigation.

In areas of "moderate" or "low" sensitivity, an archaeological field inspection may or may not be required as part of the environmental impact process, depending upon a number of factors. Since archaeological resources may occur, however infrequently, in low or moderate sensitivity areas, Map 15 cannot be used in lieu of competent archaeological evaluation. For example, it is quite unlikely that archaeological resources will remain intact in heavily urbanized areas; but, when discovered, such resources will usually have increased significance due to prior unmitigated losses of data resulting from urban development. Planners may consult with qualified archaeologists to ascertain whether or not actual field inspection will be required as part of the evaluation process.*

In addition to protection via EIR policy, cities and counties and the state government can protect and use prehistoric sites in regional parks. If the sites and districts that we nominate are accepted on the National Register of Historic Places, local and state agencies will qualify for federal matching funds for acquisition and preservation. An attempt should be made to acquire and preserve representative samples of different site-classes, and public use of acquired sites should be consistent with their permanent protection.

Historic Sites

It is clear that some historic sites will inevitably be destroyed during the course of development in the project area. Planners will be called upon to make decisions about which sites should be saved at the expense of other sites. We assume that planners are interested in preserving a sample of historic sites which truly represent the cultural heritage of the southern Santa Clara Valley.

*This paragraph does not necessarily reflect the views of the authors; it was prepared at the request of the project sponsor.

A representative sample could be obtained using the taxonomy employed in Chapter IV. Time units are broken down by major shift in land-use. Changes in occupation or employment are seen as directly related to changes in land-use. Occupation is seen as the key variable characterizing subcultures within the larger cultural system. A representative sample should include sites associated with each subpopulation, each occupational type, and each period. When a subpopulation maintained more than one seasonal pose - for example, working crops during one season and residing in town during another - sites representative of each pose should be preserved if possible. Similarly, if a group experienced considerable change through time, for example, from migrant labor to landowning, an attempt should be made to preserve sites representing points along the continuum of change.

As historic sites are located, a chart like the one illustrated in Figure 5 could be constructed, presenting features important to the evaluation of the site's significance for planning purposes.

Figure 5: Example of Historic Evaluation Chart

Time	Occupation Types	Sites
Late American Period (horticulture)	Large Land Owner	Bloomfield Ranch Dunne Home
	Small Farmer	Burrell "Mountain Home"
	Tenant Farmer	
	Regularly Employed Agricultural Laborer	Zanger Work Camp
	Migrant Labor	

The range of historic sites for each period is indicated as well as the number of each kind of site. Planners could see which of their sites are "one of a kind" and which kinds of sites were missing from known record. This model can be elaborated by introducing the further classification of sites into different units of analysis useful for the study of settlement patterns, while maintaining the occupation type classification. Following Trigger (1967), these units are: the individual structure, the settlement, or unified collection of structures, and the regional distribution of settlements. Inclusion of this further classification on the chart as shown in Figure 6 will indicate what kind of settlement pattern studies are possible given known sites.

Figure 6: Example of Elaborated Evaluation Chart

Sites				
Time	Occupation Type	Individual Structure	Settlement	Regional Distribution of Settlements
Spanish-Mexican Period	Post-secularization Indians	Ruins of cabin on Pacheco Creek	Rancheria "El Paredon"	All known rancherias and single-family dwellings
Stock-raising				
Subsistence farming				

All this implies, of course, that someone is going out and recording historic sites. This recording should be accomplished in two ways:

1. The inventories of historic places now in progress can be broadened in scope, to include the kinds of resources noted above.
2. A specific format can be provided to consultants for historic evaluations in Environmental Impact Reports. Consultants can be asked to identify structures and sites representing the periods, occupation types, and subpopulations noted above. Over a period of time, a body of data would be accumulated on the distribution of historic resources, and at the same time a consistent method would be provided for evaluating and preserving such resources in the course of development.

Recommended approaches for the location of historic resources are included in Appendix VI.

When significant historic sites are located in the course of EIR preparation, every effort should be made to integrate their preservation, study, rehabilitation, restoration and interpretation into the plan for whatever project required preparation of the EIR. For example, if a residential development is planned for an area containing a significant migrant labor camp, study and restoration of the camp as a local public-interest facility might be required as a condition on permission to proceed with the development.

Other important historic sites should be acquired, studied, and restored where appropriate as county and city landmarks and as elements of public parks. Again, the emphasis in acquisition and preservation should be on representativeness more than on uniqueness or on association with famous people or events.

Agriculture

Agricultural operations have been responsible for more destruction of archaeological resources in the southern Santa Clara Valley than has any other agent. Agriculturalists are also the prime recipients of San Felipe water. Unlike urban development, agricultural operations are not normally regulated by agencies subject to CEQA. How then can the federal government avoid unnecessary agricultural impacts on archaeological resources when San Felipe water is delivered?

We suggest adoption of a program modelled on the system used for years by the SCS to encourage sound land-use practices. We suggest establishment of a regional archaeological staff in the service area, with the following responsibilities:

- a) to conduct surface and subsurface archaeological surveys of lands soon to be brought under irrigation or otherwise significantly modified.
- b) to advise farmers of ways to protect archaeological sites in the course of their operations.
- c) to arrange for salvage excavation of any sites endangered by agricultural operations that could not be protected.

The archaeological staff might best be established at or near Gavilan College in Gilroy, to insure interaction with the academic community and possibly cut costs, but it should maintain constant contact with the SCS and local agriculturalists. The staff might also supply convenient services, under contract, to cities, counties and private agencies for EIR preparation and review as well as general planning.

The cost of such a program should be moderate, and might well decrease after a few years, since Chatham says:

"Within ten years after supplemental water is made available to the Hollister-San Juan Bautista area, it is estimated that the irrigated acreage will increase from present usage to approximately 95 per cent of the ultimate usage." (Chatham 1961:88)

Actual costs are difficult to compute in advance, but if we assume a need for one full-time professional archaeologist and two to three periodic assistants, sufficient travel and equipment budgets, five to six minor sample excavations and one to two fairly large-scale excavations each year, an annual cost of \$100,000-\$150,000 may be close to accurate. This sum could be provided by an approximate \$0.50 increase per acre-foot in the selling price of San Felipe water at the mouth of the Pacheco Tunnel (see Interior 1967).

In summation, we see four steps that must be taken if the archaeological resources of the southern Santa Clara Valley are to be preserved:

- 1) Cities and counties should adopt firm and consistent policies requiring full consideration of both prehistoric and historic archaeological resources during preparation of EIRs, and mitigation of project impacts on such resources.
- 2) Inventories of historic resources should be expanded to include sites representative of all occupation types and subpopulations.
- 3) Cities, counties, and the state should acquire and protect representative prehistoric sites and site-clusters, and historic sites representative of all periods, occupation types, and subpopulations.
- 4) The federal government should establish an archaeological advisory and action team modelled on the SCS district staff, to evaluate and mitigate the impacts of agriculture.

In implementing these recommendations, the data provided in the preceding chapters should be used and updated as needed.

Special Recommendations to the City of San Juan Bautista

The city of San Juan Bautista occupies a special place in our study. It contains what is perhaps the area's greatest concentration of historic resources, and is the location of significant prehistoric activities as well. Moreover, San Juan Bautista stands at a crossroad in its development as a city. With the closing of the town's major industry, the cement plant, San Juan Bautista's primary economic resources are its delightful natural environment and its history. The history of San Juan Bautista should not be undervalued as an economic asset, but neither should the city be allowed to become an historical Disneyland, if it is to maintain either its character or the scientific value of its resources. Several steps could be taken by the city to enhance the value and preservability of its past:

- 1) The entire city should be nominated to the National Register of Historic Places as a District, or added to the San Juan Canyon District. This step is more justifiable than nominating individual buildings because the entire city constitutes an historic archaeological site, some parts of which are buried but all of which is likely to yield significant information. Making the city a Register District would qualify the city government and local private groups for various grants and other forms of assistance for historic preservation.
- 2) Detailed consideration should be given to the historic value of every parcel of land scheduled for development of any kind. Archaeological evaluations and, where necessary, excavations should be provided in advance of such projects. Such excavations should involve the many people of the community who are interested in participating in archaeological research.

- 3) Restoration of old buildings should be accompanied by full study of their original construction and use and the changes they have undergone, using documentary, architectural, and archaeological methods.
- 4) Efforts should be made to develop museological and archival facilities to preserve artifacts and documents, and to attract working historical scholars to the community.

Conclusion

This report is essentially the first of its kind in California. Based on the very broad directives of NEPA and Executive Order 11593, we have attempted to provide the National Park Service, the Bureau of Reclamation, and the counties and cities of the San Felipe study area with the fullest possible evaluation of the area's archaeological resources, and the most comprehensive possible set of recommendations. We hope that this document fulfills the role for which it was designed, and that others can build upon it in the future.

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COMPOSITION OF STUDY TEAM
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